SONY

MULTI RESOLUTION FILM SCANNER

FVS-1000 System

MULTI RESOLUTION TELECINE

FVS-T1000

TELECINE PROCESSOR

FVS-P1000

TELECINE HDTV PROCESSING BOARDS

BKFV-100

TELECINE SDTV PROCESSING BOARDS

BKFV-200

MAINTENANCE MANUAL Part 1

1st Edition

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

FVS-T1000 (UC)	Serial No. 10101 and Higher
FVS-P1000 (SY)	Serial No. 10001 and Higher
BKFV-100 (SY)	Serial No. 10001 and Higher
BKFV-200 (SY)	Serial No. 10001 and Higher

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Vorsicht!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.

Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

警告
万一，異常が生じた際に，お客様が電源をOFFすることができるように，設置の際には，機器近くの固定配線内に専用遮断装置を設けてください。

WARNING
When installing the unit, incorporate a readily accessible disconnect device in the fixed wiring, so that the user can turn off the power in case a fault should occur.

WARNUNG
Beim Einbau des Geräts ist daher im Festkabel ein leicht zugänglicher Unterbrecher einzufügen, damit sich bei einer Funktionsstörung die Stromversorgung zum Gerät jederzeit unterbrechen läßt.

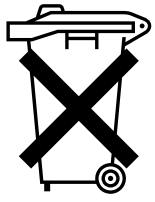
AVERTISSEMENT
Lors de l'installation, incorporez un interrupteur dans le fil électrique, fixé près de l'appareil, pour qu'on puisse couper l'alimentation en cas d'anomalie.

Voor de klanten in Nederland

Dit apparaat bevat een $(CF)_n$-Li batterij voor memory back-up.

Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat bij einde levensduur afdankt.

Gooi de batterij niet weg. maar lever hem in als KCA.



Bij dit produkt zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

Für Kunden in Deutschland

Entsorgungshinweis: Bitte werfen Sie nur entladene Batterien in die Sammelboxen beim Handel oder den Kommunen. Entladen sind Batterien in der Regel dann, wenn das Gerät abschaltet und signalisiert "Batterie leer" oder nach längerer Gebrauchsdauer der Batterien "nicht mehr einwandfrei funktioniert". Um sicherzugehen, kleben Sie die Batteriepole z.B. mit einem Klebestreifen ab oder geben Sie die Batterien einzeln in einen Plastikbeutel.

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(Will be available as a supplement.)

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(Will be available as a supplement.)

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Manual Structure

Purpose of this manual

This manual is the maintenance manual part 1 of the Multi Resolution Film Scanner FVS-1000 System (The FVS-1000 system consists of the Multi Resolution Telecine FVS-T1000 and Telecine Processor FVS-P1000).
This manual is intended for use by trained system and service engineers, and describes the information that premise the service based on main parts and boards replacement (installation, service overview, periodic check and maintenance, block diagram, test mode, electrical alignment, spare parts).
Moreover, describes the information for the following optional boards.

- Telecine HDTV Processing Boards BKFV-100
- Telecine SDTV Processing Boards BKFV-200

Contents

The following is a summary of all the section for understanding the contents of this manual.

Section 1 Installation

This section describes general and installation.

Section 2 Service Overview

This section describes the principal parts and boards locations.

Section 3 Periodic Check and Maintenance

This section describes the periodic check and maintenance.

Section 4 Replacement of Main Parts

This section describes the replacement of main parts.

Section 5 Test Mode

This section describes the test mode.

Section 6 Electrical Alignment

This section describes the electrical alignment.

Section 7 Spare Parts

This section describes the spare parts premise based on block replacement.

Section 8 Block Diagram

This section describes the overall block diagram.

Related manuals

Besides this Maintenance Manual Part 1, the following manuals are available for the FVS-1000.

- **Operation Manual (supplied with FVS-T1000)**
  Part No.: 3-866-844-01
  This manual describes the application and operation.

- **Maintenance Manual Part 2 Volume 1 (available on request)**
  Part No.: 9-967-822-01
  This manual describes the information that premise the service based on parts replacement (diagnostics, parts replacement, electrical alignment).
  If this manual is required, please contact your local Sony Sales Office/Service Center.

- **Maintenance Manual Part 2 Volume 2 (available on request)**
  Part No.: 9-967-823-01
  This manual describes the information that premise the service based on parts replacement except board replacement (parts replacement, block diagrams, schematic diagrams, boards layout).
  If this manual is required, please contact your local Sony Sales Office/Service Center.

Section 1
Installation

1-1. Overview

The FVS-1000 is the system to convert the video data recorded on the 35 mm or 16 mm (when the optional kit BKFV-400 is installed)film to the SDTV or HDTV signal and to convert the audio data to the audio signals.
The FVS-1000 consists of the film transport system, processor system, camera shifter and lamp house and is mounted in the rack of which the dimensions is 1173 mm (width) × 1798 mm (height) × 780 mm (depth). The film transport system is the FVS-T1000. The processor system is the FVS-P1000 which consists of the processor boards.

1-2. Unpacking and Supplied Accessories

- Unpack carefully according to the procedure on the side of the pack.
- The FVS-T1000 is equipped with the casters, so it is easy to move.

FVS-T1000

Supplied accessaries

Description	Amount
Operation manual	× 1
Maintenance manual part1	× 1
Knob for spool	× 2
Control panel	
Control panel assembly	× 1
Rack angle	× 2
Screw (B5 × 10)	× 4
Screw (PSW4 × 10)	× 4
Lens	
35 mm conversion lens	× 1
Master zoom lens	× 1
OPS mirror	
OPS assembly	× 1
Screw (PSW3 × 6)	× 4
Air blow assembly	
Air blow assembly	× 1
Connecting elbow assembly	× 1
Coupler	× 1
Drain assembly	× 1
Processor	
Handle	× 2
Screw (RK5 × 14)	× 4
Vibration-proof pad	× 6

FVS-P1000

Supplied accessaries

Description	Amount
Extension board (EX-632)	× 1
Extension board (EX-670)	× 1

1-3. Environmental Conditions

To use the FVS-1000 safely and to maintain the stable performance in the long term, keep the appropriate environmental conditions according to the followings.

Especially, as for the strength of the floor where the FVS-1000 is installed, be sure to keep the specified or more strength.

CAUTION

Install the FVS-1000 to the place which has the adequate strength.
If it is installed to the place which does not have the sufficient strength, there is a danger of death or severe injury with it tumbled.

- Operating temperature : 10 ˚C to 35 ˚C (Recommended temperature range: 20 ˚C to 25 ˚C)
- Operating humidity : 20 % to 90 % (no dew condensation)
- Evenness of floor : 5 mm or less
- Height of ceiling : 500 mm or more from the top of the system
- Strength of floor : 12 kN/m^2 (1200 kgf/m^2) or more, 6 kN/point (600 kgf/point) or more

Note

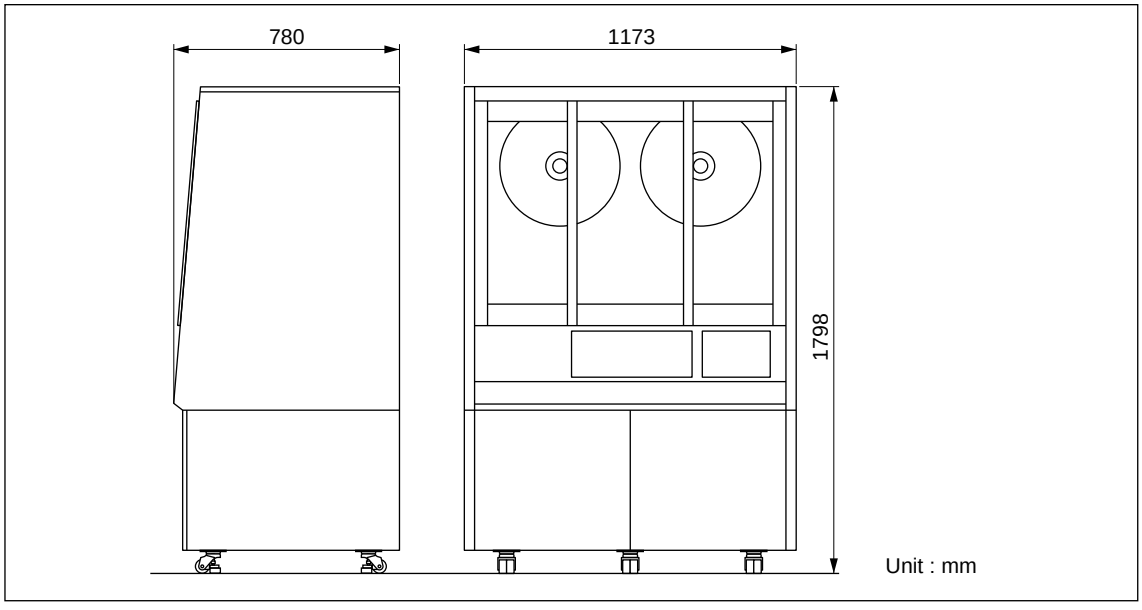
The pressure per 1 point is the sum of the pressure by the caster (75 mm (diameter) × 65 mm (width))and the adjuster foot (leveler) (80 mm (diameter)).

Do not install the FVS-1000 under the following conditions.
- Under high temperature or high humidity
- Near a heat source
- Dusty
- Under the place where there is vibration
- Near the strong electric field or magnetic field

1-4. Dimensions and Weight

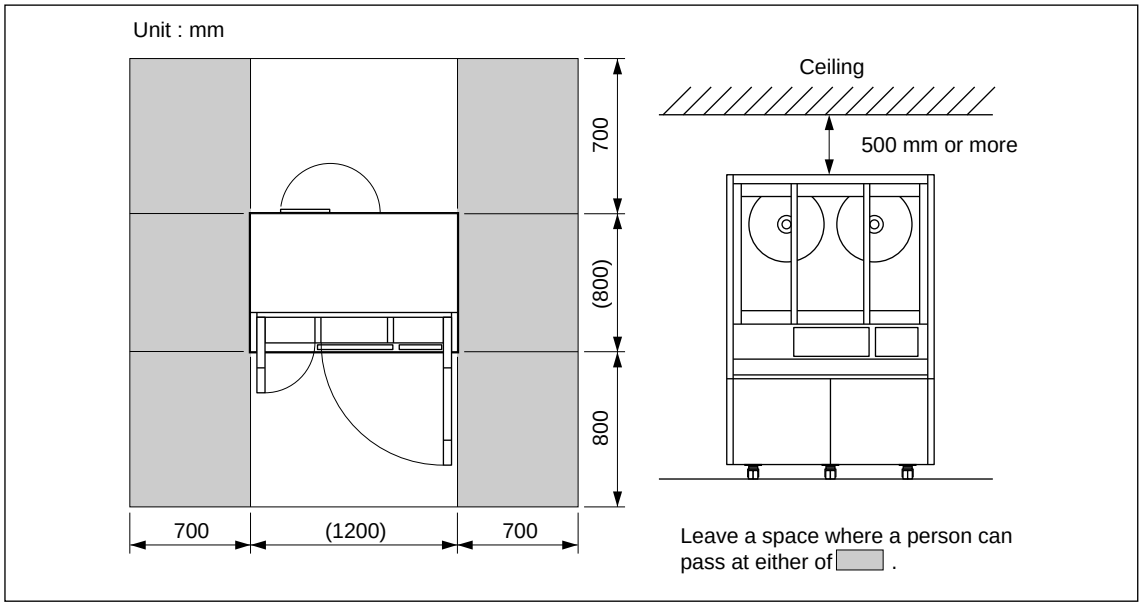
Dimensions

1173 mm (W) × 1798 mm (H) × 780 mm (D)
Weight
600 kg



1-5. Installation Space

When installing the FVS-1000, keep the following installation space taking ventilation and servicing into consideration.



Leave a space where a person can pass at the left or right side of the FV S-1000, and a space of 500 mm or more at the top of the FVS-1000.

1-6. Power Supply and Air Supply Specifications

WARNING

Prepare the interior wiring which is near the FVS-1000 and easy to connect with the connectors of the FVS-1000.

Power supply voltage
For UC : AC 120 V $^{+5\,\%}_{-10\,\%}$, 50/60 Hz ±0.5 %
For CE : AC 220 - 240 V ±10 %, 50/60 Hz ±0.5 %

Taking the above specifications into consideration, execute the electric supply construction for breaker etc.

Air supply specifications

Pressure	:	0.25 to 0.7 Mpa (2.5 to 7.1 kgf/cm^2)
Flux	:	25 Nl/min or more
Relative humidity	:	80 % or less
Others	:	Water, oil and dust should not be included. (Max. 40 μm)

To supply the outside air from the pipe arrangement for supplying the high-pressure air, check the pressure, flux and quality of the air, then satisfy the above specifications using a regulator or filter, and then connect. When there is no pipe arrangement, to supply the stable air, it is recommended to use the oil free compressor equipped with a tank.

Note

- If the air of which the pressure is more than the above specified value is supplied directly, there is a danger of damaging the equipments.
- If the air which includes the water, oil or dust is supplied, there is a possibility of causing an internal damage. Be sure to supply the clean air which passed through the air drier and the mist filter.
- As for the equipment to supply the outside air, refer to the operation manual of it. Be sure to apply the periodic maintenance (draining the water from the tank etc.).

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1-7. Warning during Installation

CAUTION

Safety working

- For safety, install the FVS-1000 by four or more persons. In addition, one or more of them should be trained for the installation.

Keeping the parts

Store the parts removed during installation, making sure that they do not damage and do not interference with work.
Also store all unpacked accessories supplied.

Installation work

The FVS-1000 is equipped with the optical equipments, sensors and driving rail etc. of which the high accuracy must be maintained. Be careful not to put the pressure on them or damage them with the tools. In addition, be careful not to deform and damage the parts of driving system.

Screws

- When installing the FVS-1000, be careful not to forget tightening the screws. Put away the unnecessary screws and do not leave the screws incompletely tightened. If the parts or screws fall during the operation, there is a possibility of causing some trouble or mis-operation.
- Screws must be tightened with the following tightening torque.

Hexagonal screws with hole	(M3) : 1.0 N•m (10 kgf•cm)
Hexagonal screws with hole	(M4) : 2.5 N•m (25 kgf•cm)
Hexagonal screws with hole	(M5) : 3.5 N•m (35 kgf•cm)
Screw (+)	(M3) : 0.8 N•m (8 kgf•cm)
Screw (+)	(M4) : 1.4 N•m (14 kgf•cm)

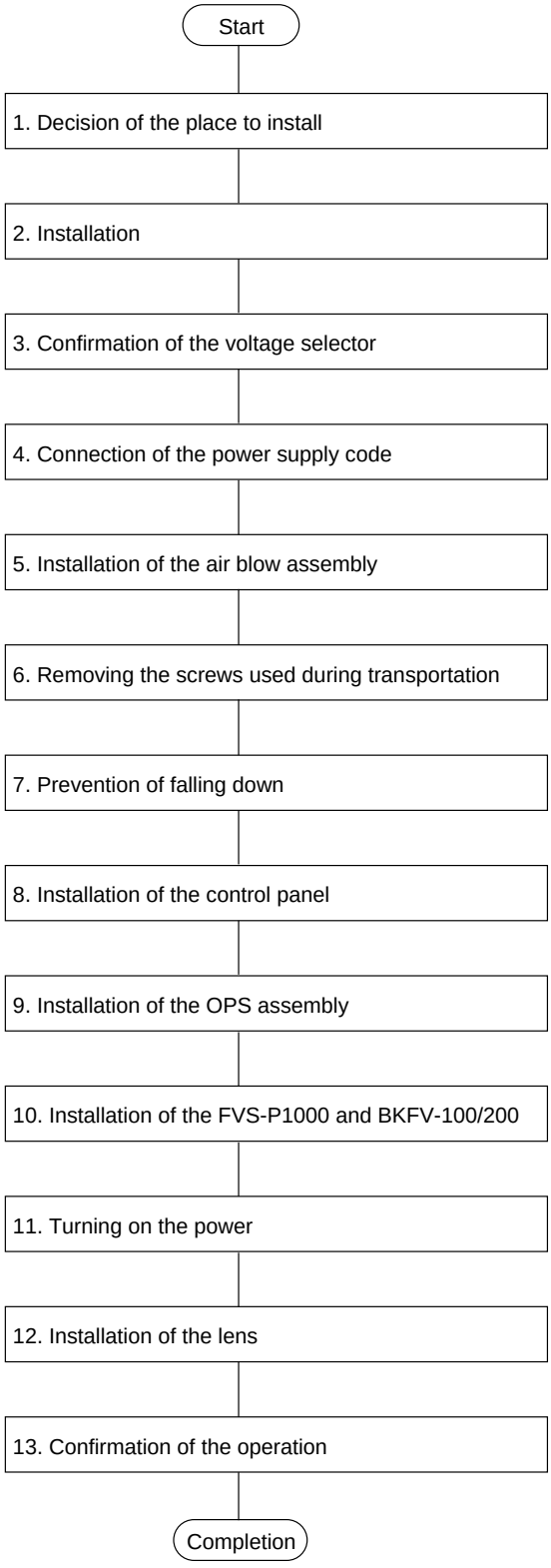
1-8. Fixtures and Tools

To install the FVS-1000, the following fixtures and tools are necessary.

• Metal scale	Length : 150 to 300 mm
• L-shaped hexagonal wrench	Subtense :10 mm, Subtense : 8 mm
• Level	
• Screw driver (+)	M3 to M5
• Screw driver (−)	M3 to M4

1-9. Installation Flow Chart

According to the following flow chart, install the FVS-1000.
As for the installation procedure, refer to section 1-10.


Start
1. Decision of the place to install
2. Installation
3. Confirmation of the voltage selector
4. Connection of the power supply code
5. Installation of the air blow assembly
6. Removing the screws used during transportation
7. Prevention of falling down
8. Installation of the control panel
9. Installation of the OPS assembly
10. Installation of the FVS-P1000 and BKFV-100/200
11. Turning on the power
12. Installation of the lens
13. Confirmation of the operation
Completion

1-10. Installation Procedure

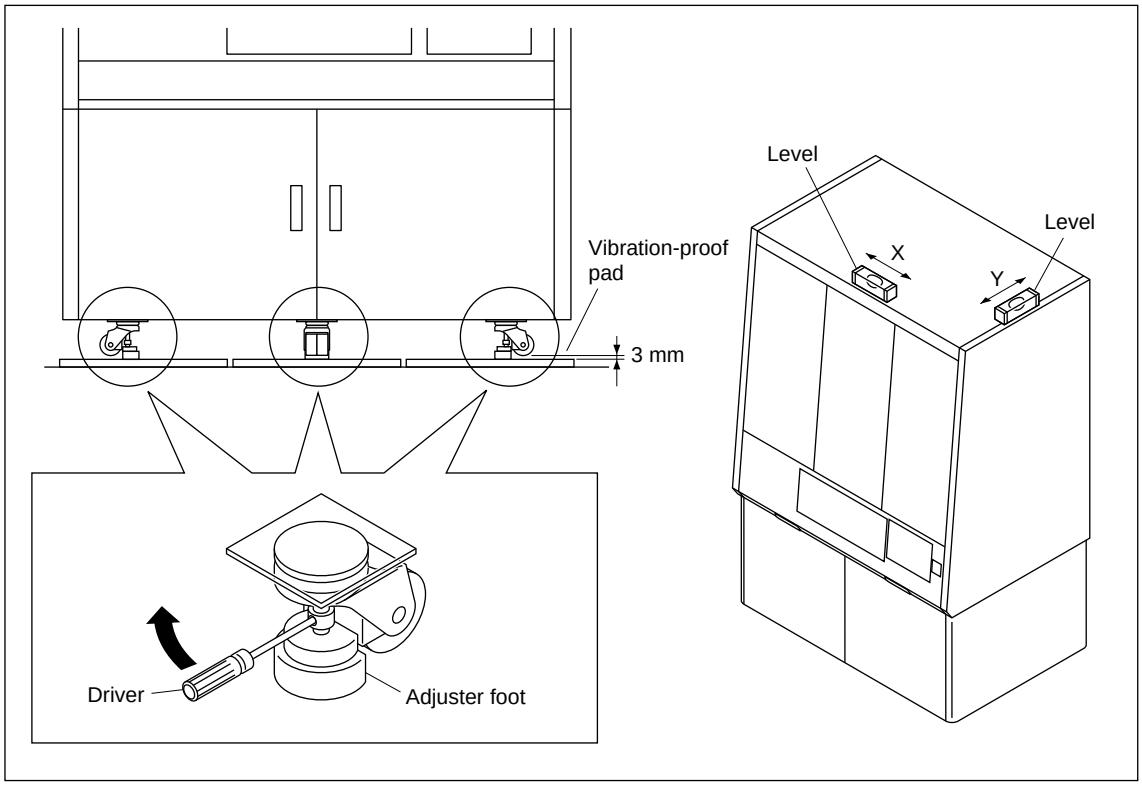
1. Decision of the place to install

Confirm that the following conditions are satisfied.

- Environmental conditions (Refer to “1-3. Environmental Conditions”)
- Installation space (Refer to “1-5. Installation Space”)
- Equipments to supply the power and air (Refer to “1-6. Power Supply and Air Supply Specifications”)

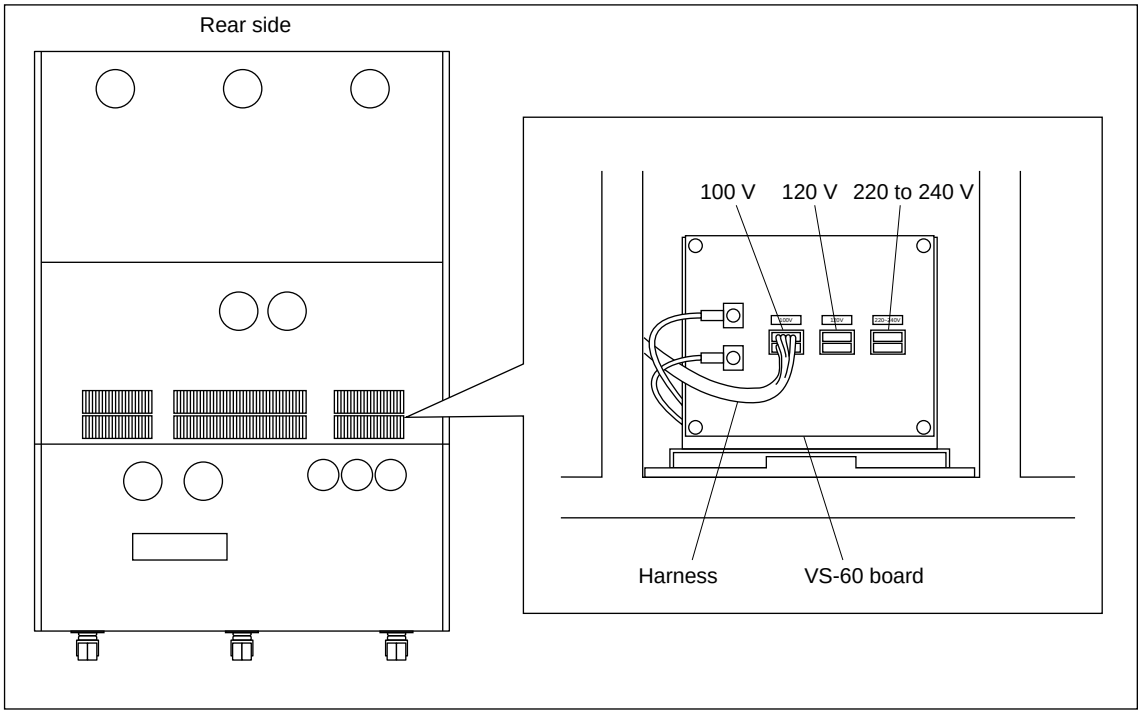
2. Installation of the FVS-1000

1. Spread the six vibration-proof pads on the place where the FVS-1000 will be installed. Move the FVS-1000 on those pads.
2. Confirm that the six adjuster foots are positioned on the vibration-proof pads, then adjust the four adjuster foots on the four corners at the bottom of the FVS-1000 using the screw driver so that the height between the caster and the vibration-proof pads can be 3 mm.
3. Adjust the adjuster foots so that the FVS-1000 can be installed horizontally in the direction of X and Y shown in the following figure.
4. Confirm that the two levels show horizontal.
5. Confirm that the two adjuster foots on the center of the front and rear sides at the bottom of the FVS-1000 are positioned on the vibration-proof pads, then adjust them using the driver so that the height between the caster and the floor can be 3 mm.
6. Confirm that the two levels show horizontal.



3. Confirmation of voltage selector

1. Check the VS-60 board from the slit of the rear panel.
2. Confirm that the harness is connected with the connector of the used voltage on the VS-60 board.



4. Connection of power supply code

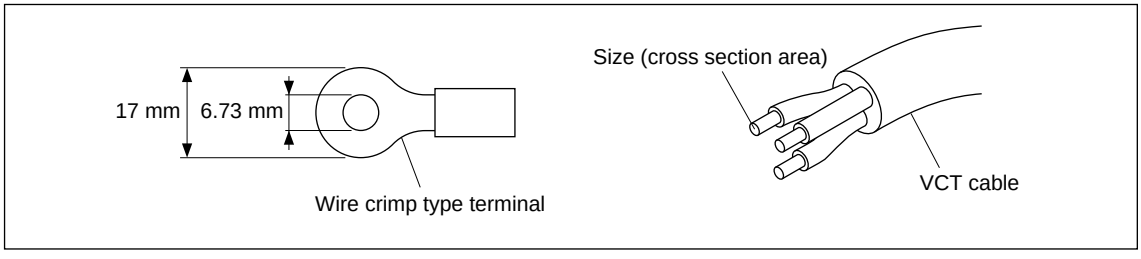
WARNING

Use the specified power supply code.
If the power supply code other than the specified one is used, there is a danger of a fire or an electrical shock.
When installing the unit, incorporate a readily accessible disconnect device in the fixed wiring, so that the user can turn off the power in case a fault should occur.
This work may be required by laws of each country. Follow laws of each country.

Specified power supply code

- 600 V VCT cable (3 cores)
  Select from the following three codes according to the power consumption.
  Size (cross section area)
  5.5 mm^2 : 36 A or less
  8.0 mm^2 : 44 A or less
  14.0 mm^2 : 62 A or less

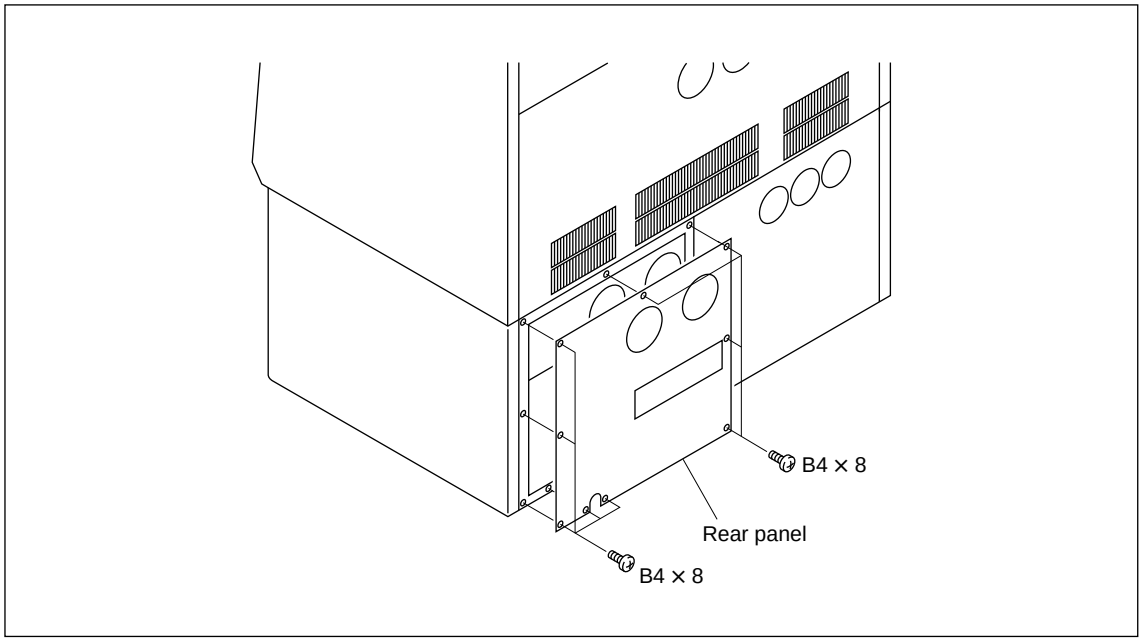
- Wire crimp type terminal



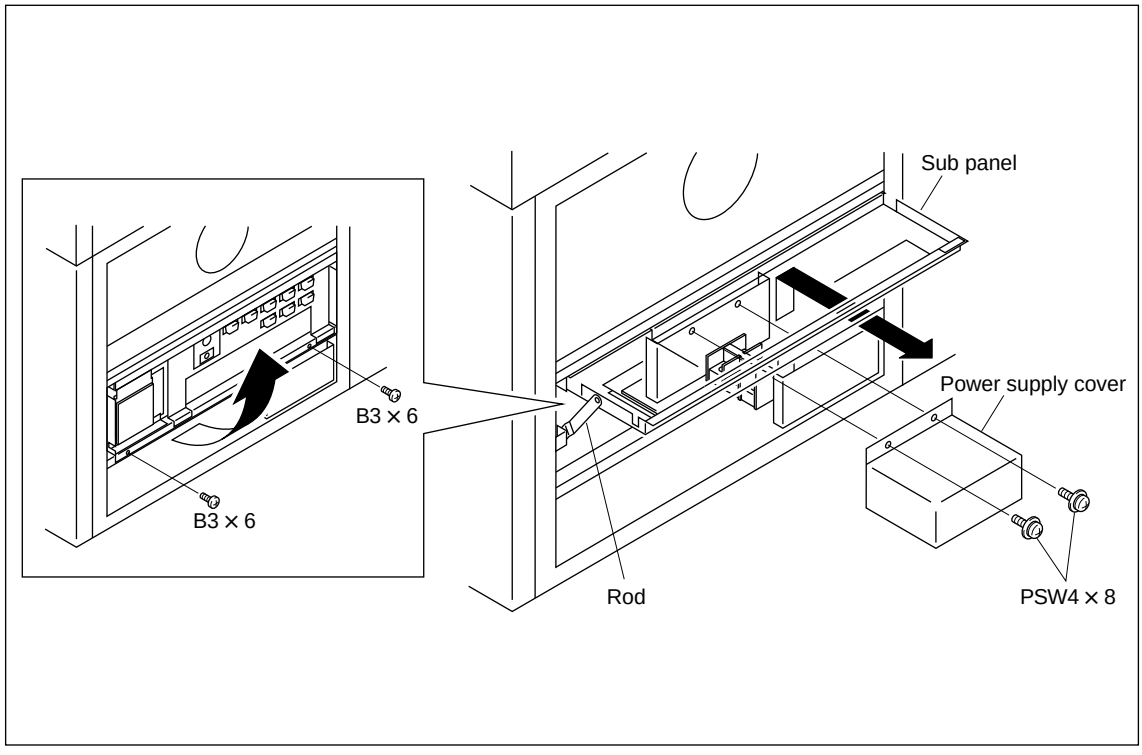
CAUTION

Connect the safety ground. If the safety ground is not connected, there is a danger of an electrical shock.

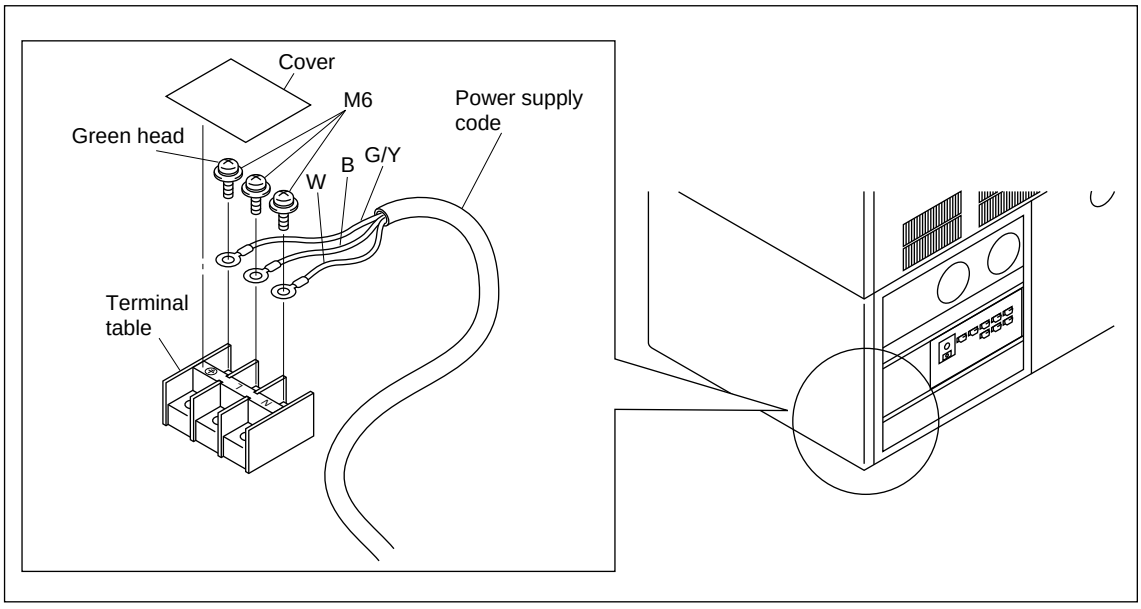
1. Remove nine screws, then remove the rear panel.



2. Remove the two screws and flap subpanel.
3. Prop the subpanel with rod.
4. Loosen the two screws, then remove the power supply cover in the direction of arrow.



5. Remove the cover of the terminal table.
6. Connect the specified power supply code with the terminal table as shown in the following figure.
7. Install the cover to the terminal table.



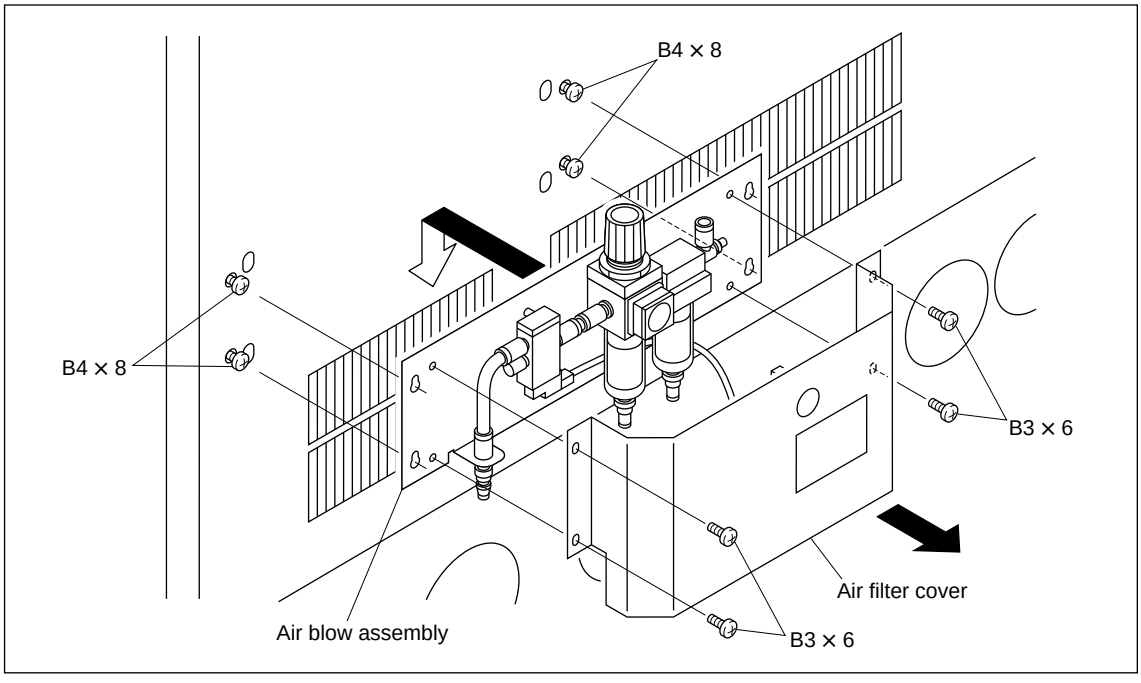
8. Install the power supply cover and rear panel in the reverse order of procedure 1 to 4.

Note

Pull out the power supply code through the notch of the rear panel.

5. Installation of the air blow assembly

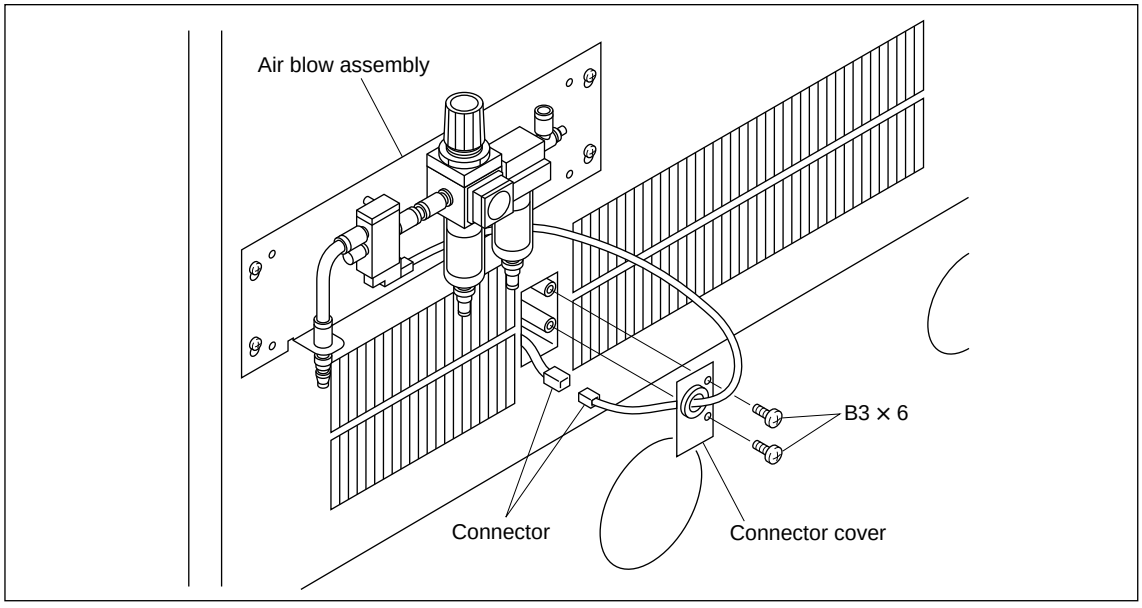
1. Loosen the four screws of the rear panel.
2. Hang the air blow assembly on the four screws loosened in procedure 1 with passing the screws through the holes on the four corners of the air blow assembly.
3. Remove the four screws, then remove the air filter cover from the air blow assembly.



4. Remove the two screws, then remove the connector cover from the rear panel.
5. Pass the connector of the air blow assembly through the hole of the connector cover, then connect it with the connector fixed to the connector support plate.
6. Fix the connector cover to the rear panel with the two screws (B3 × 6).

   Note

   Put the harness inside as much as possible.



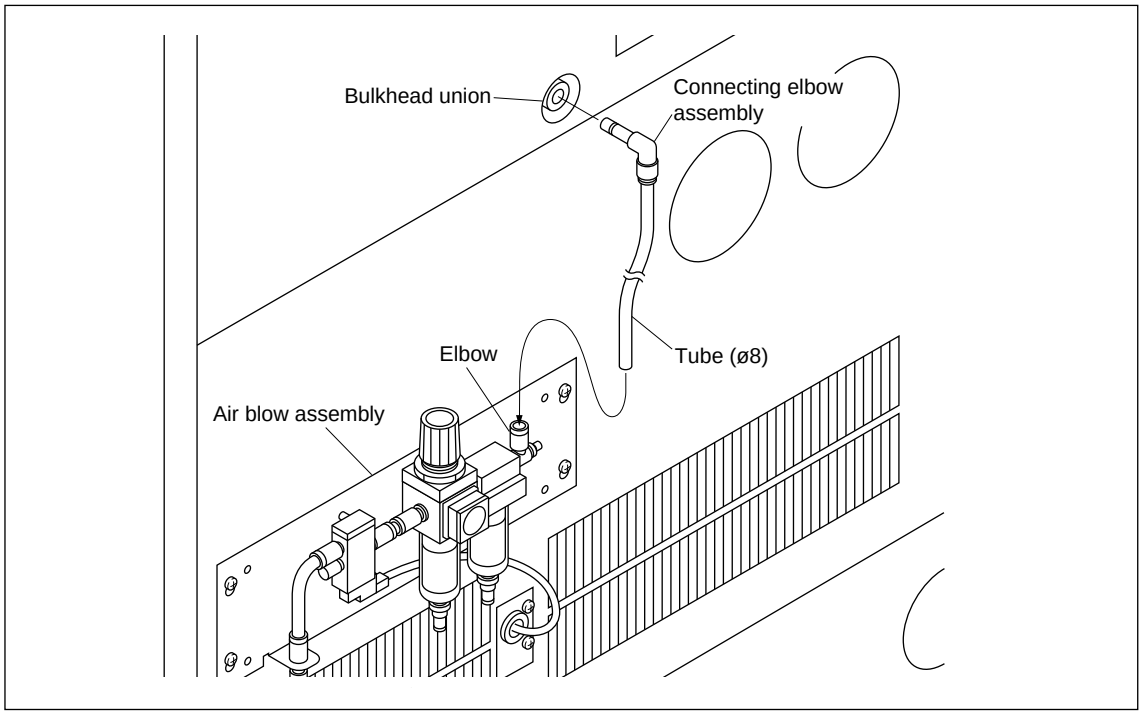
7. Insert the tube (ø8) to the elbow (one-touch joint) of the air blow assembly.

   Note

   Insert the tube completely, then confirm that it does not come out by pulling slightly.
8. Insert the connecting elbow to the bulkhead union.

   Note

   Insert the connecting elbow completely, then confirm that it does not come out by pulling slightly.



9. Set the air supply socket to the outside air supply tube, then connect the socket with the air supply porthole of the air blow assembly.

Note

Seal the air supply socket to the air supply porthole until the click can be heard.
When the outside air supply tube is 1/4 inch, it is possible to use the supplied air supply socket.
When the outside air supply tube is not 1/4 inch, use the air supply socket suitable to it.
Recommended socket : Nitto Industry Corporation, Hi-coupler socket (20 type, 30 type, 40 type)
Hi-coupler socket (through which the outside air is supplied) has the automatic opening and shutting bulb, so when the socket is pulled out, the air supply is stopped.
Do not supply the outside air before completing the installation.

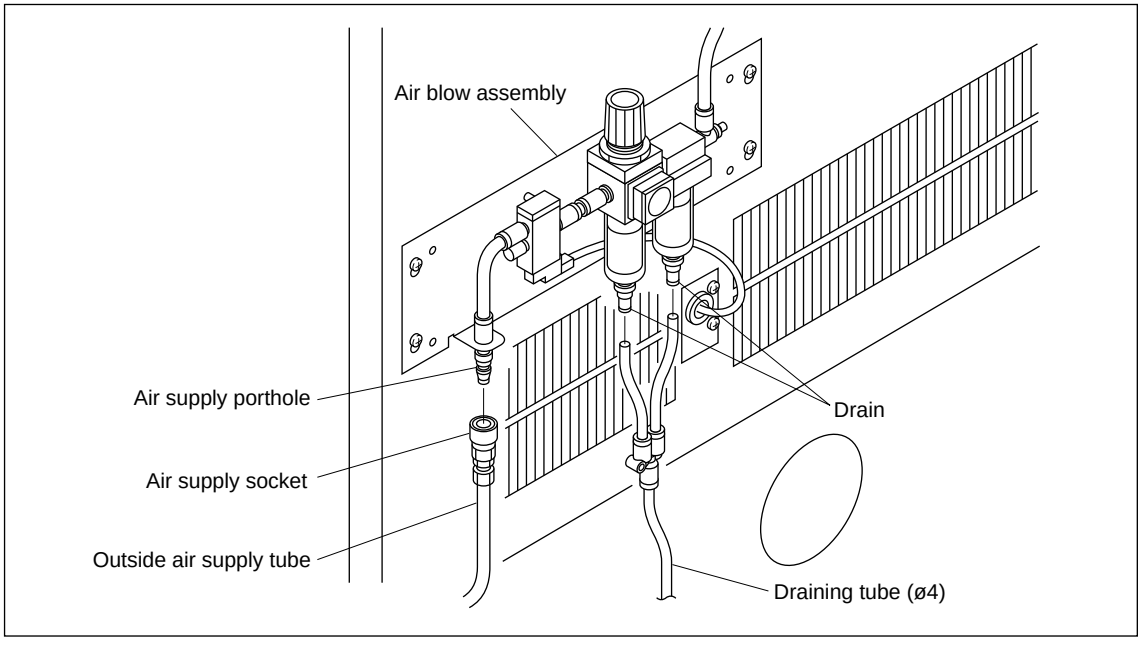
10. Insert the drain assembly to the drain (one-touch joint) of the air blow assembly.

WARNING

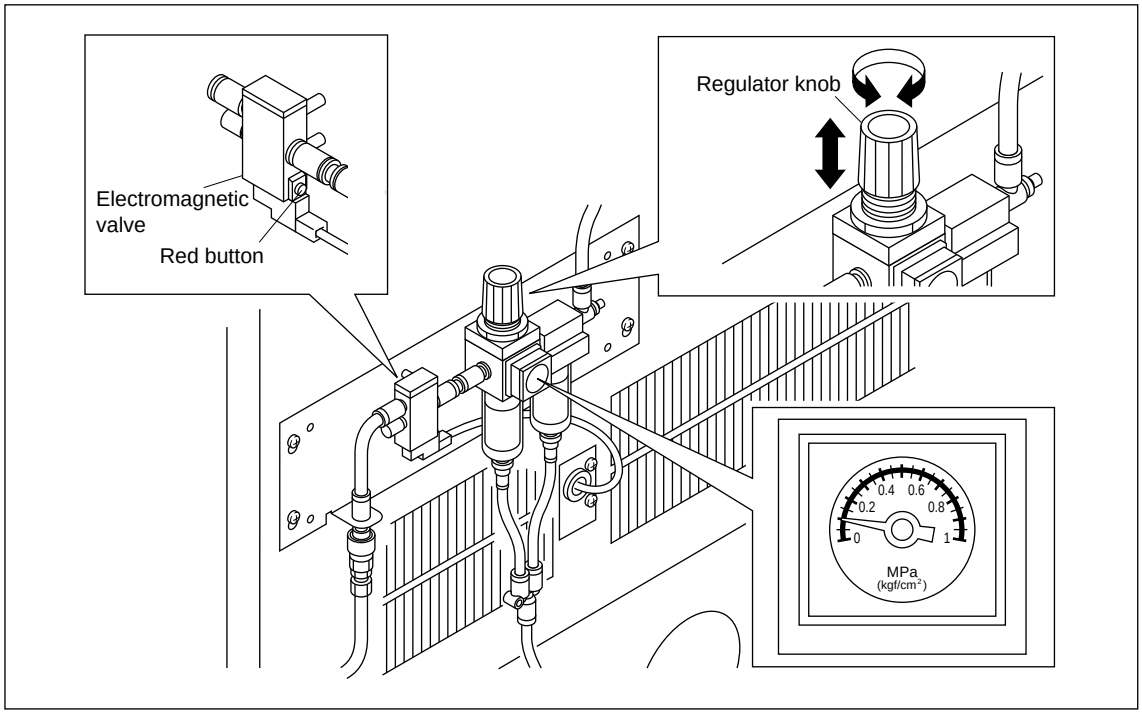
Be sure to connect the tube with the drain.
If no tube is connected, there is a case that the liquid is scattered, then enters eyes or stains clothes.
When the liquid enters eyes, clean the eyes in the clean water immediately, then consult a physician.

Note

- Unnecessary water and oil which are included in the supplied air is drained from the drain. To receive it, take some measures (placing the saucer etc.).
- Insert the tube completely, then confirm that it is not come out by pulling slightly.
- Do not set the draining tube higher than the drain.
  There is a possibility that the water and oil flows backward from the drain.
- The length of the tube should be 5 m or less.



11. Adjust the air pressure according to the following procedure.
    (1) Supply the outside air.
    (2) Pull up the regulator knob to release the lock.
    (3) Turn the regulator knob with pushing the red button of the electromagnetic valve. Turning the regulator knob so that the indicator of the manometer may point to the following value.
    Specification : 0.1 Mpa (1 kgf/cm^2)
    (4) Release the red button of the electromagnetic valve.
    Push the regulator knob to be locked.
    (5) Stop supplying the outside air.



12. Install the air filter cover removed in procedure 3.

Note

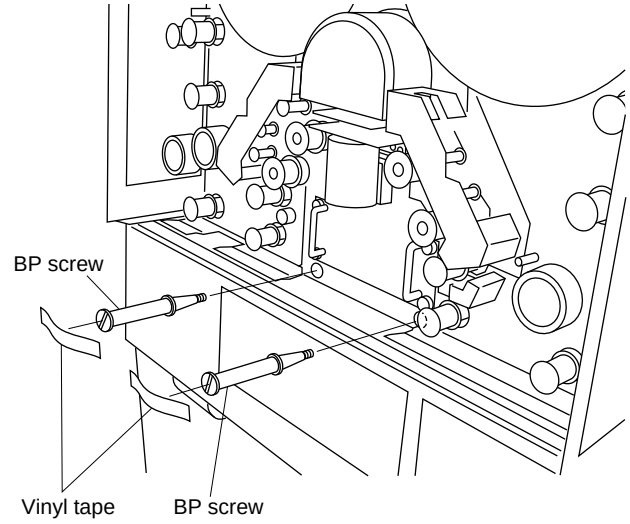
Be careful not to insert the harness between the air blow assembly and the air filter cover.

6. Removing the screws fixed during the transportation

Remove the vinyl tape and two BP screws fixed during the transportation.

Note

Store the removed BP screws for transportation in the drawer of the unit.



7. Prevention of falling down

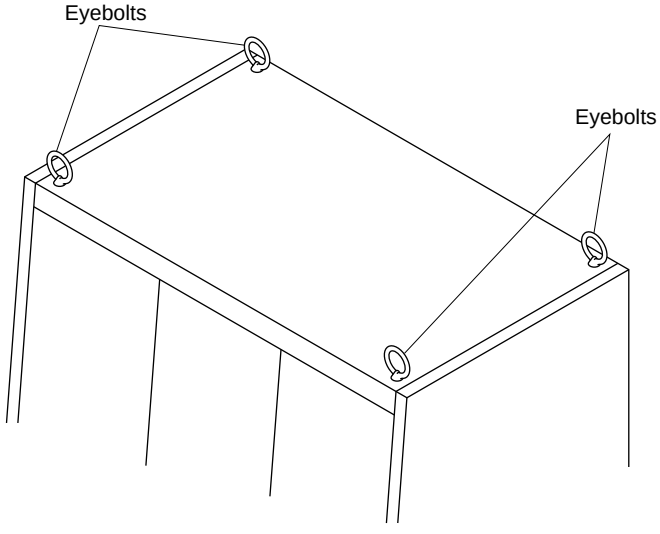
To prevent the FVS-1000 from falling down by an earthquake etc., it is recommended to fix the FVS-1000.

WARNING

To prevent the FVS-1000 from falling down or moving, be sure to fix the FVS-1000 to the ceiling which has the enough strength using a chain etc.

Fixing to the ceiling or pillar (using eyebolt)

On the top of the FVS-1000, there are four eyebolts (M12). Connect the eyebolts and the pillar or ceiling which has enough strength by a chain etc. with the chain slacked.



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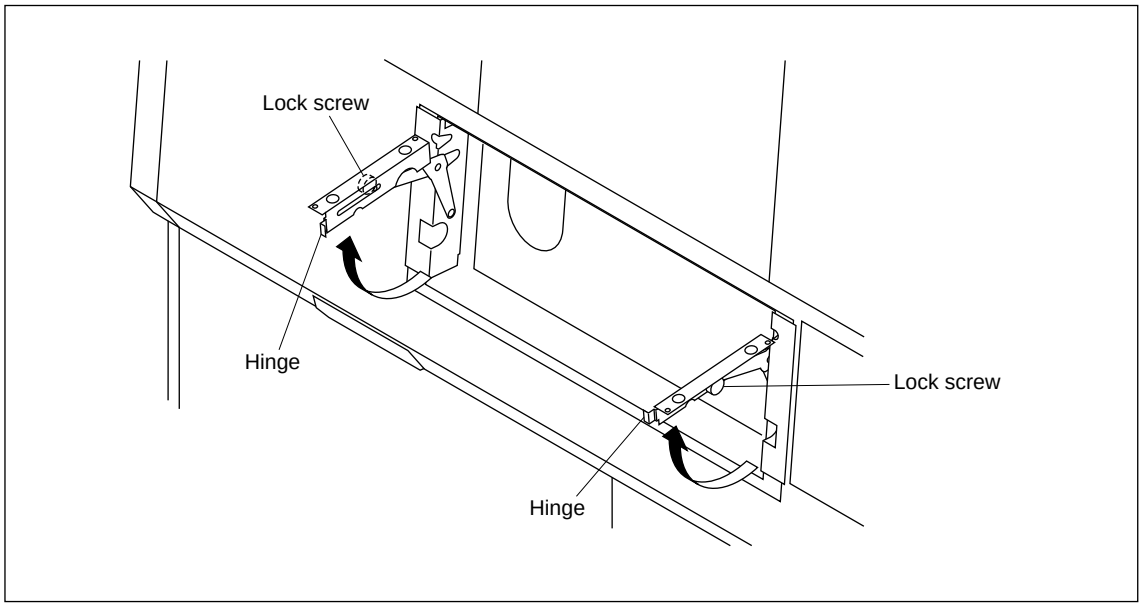
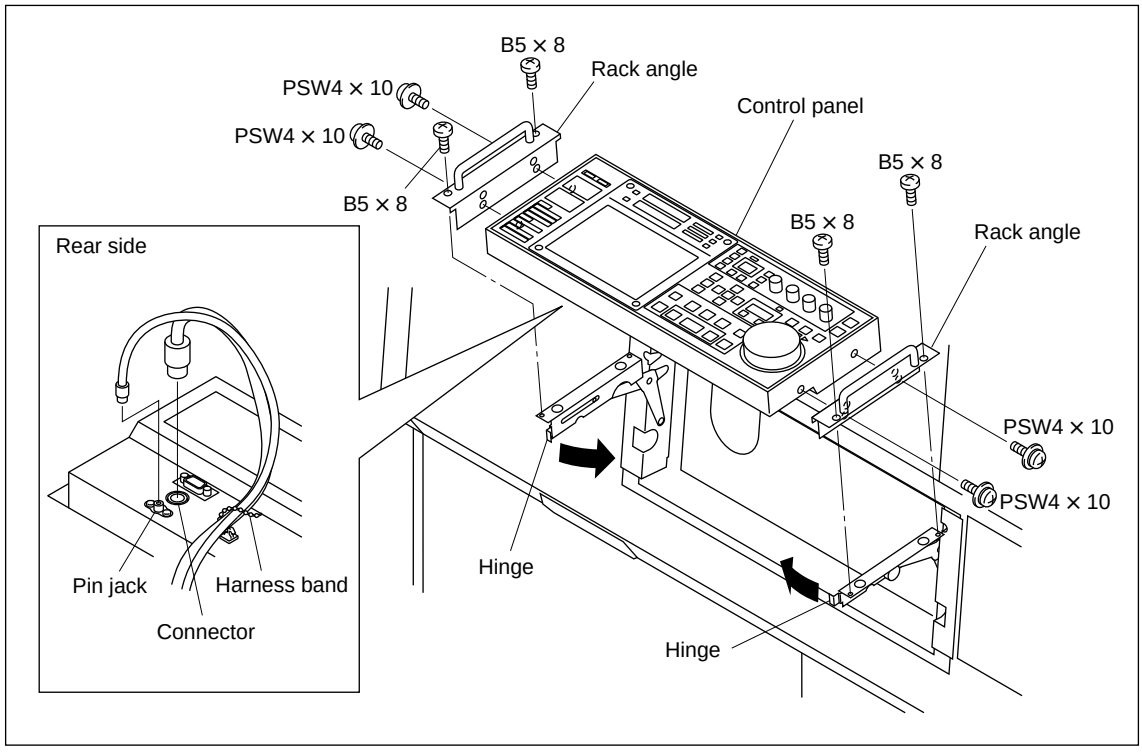
8. Installation of the control panel

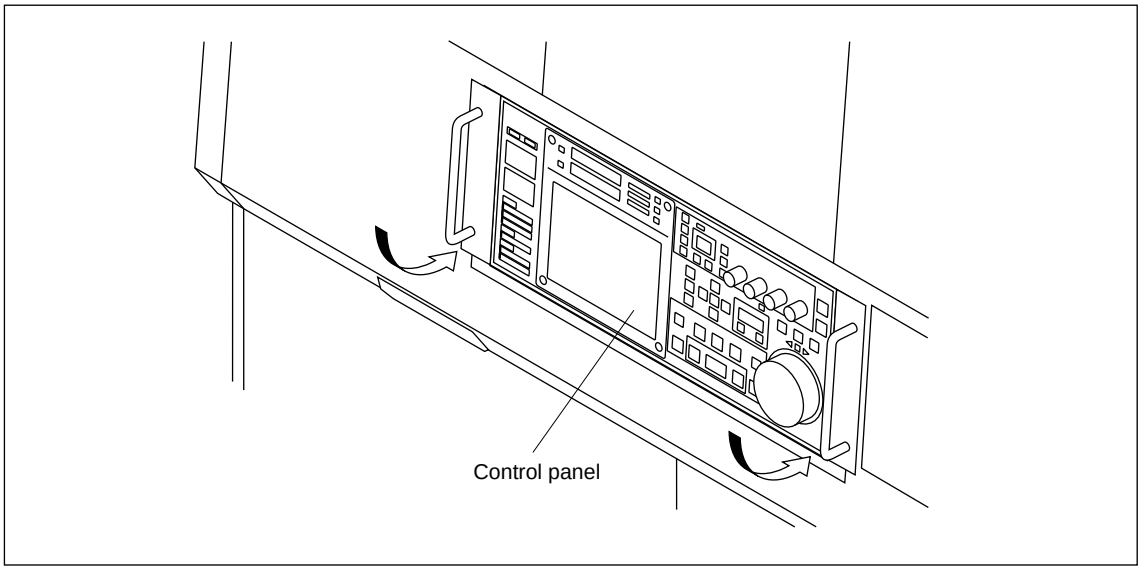
1. Pull out the hinges in the arrow direction.
2. Tighten the left and right lock screws to fix the hinges.



3. Fix the rack angle to the control panel with the supplied four screws (PSW4 × 10).
4. Place the control panel on the hinges and fix with the four screws (B5 × 10) provided. Move the hinges in the arrow direction and attach them.
5. Connect the connector and the pin jack at the rear side of the control panel, then fix the harnesses with the harness band.

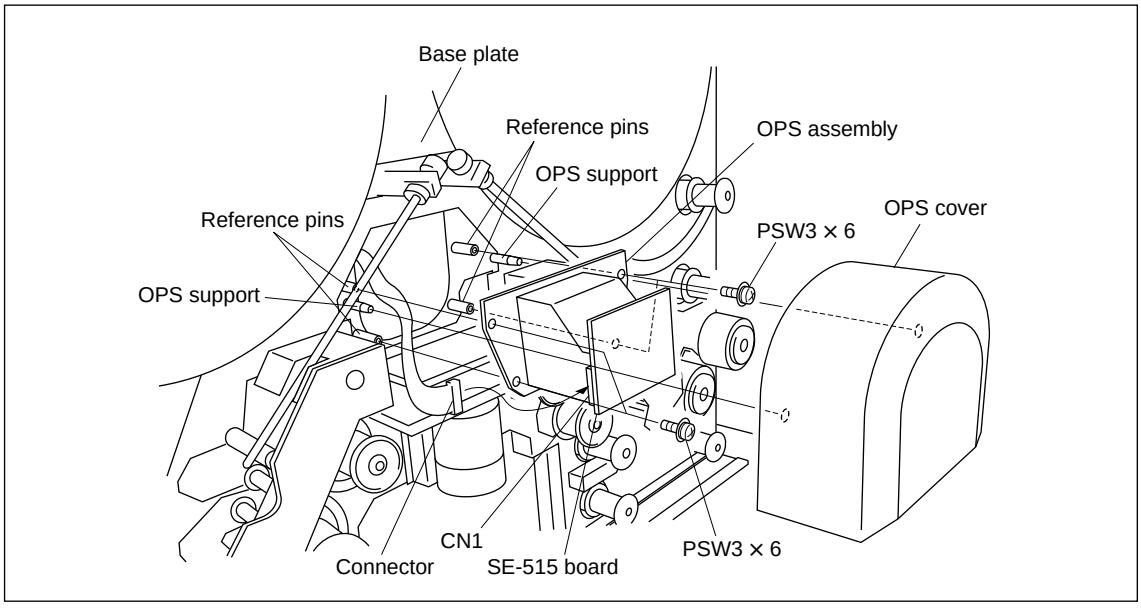


6. Loosen the rock screw, then insert the control panel.



9. Installation of the OPS assembly

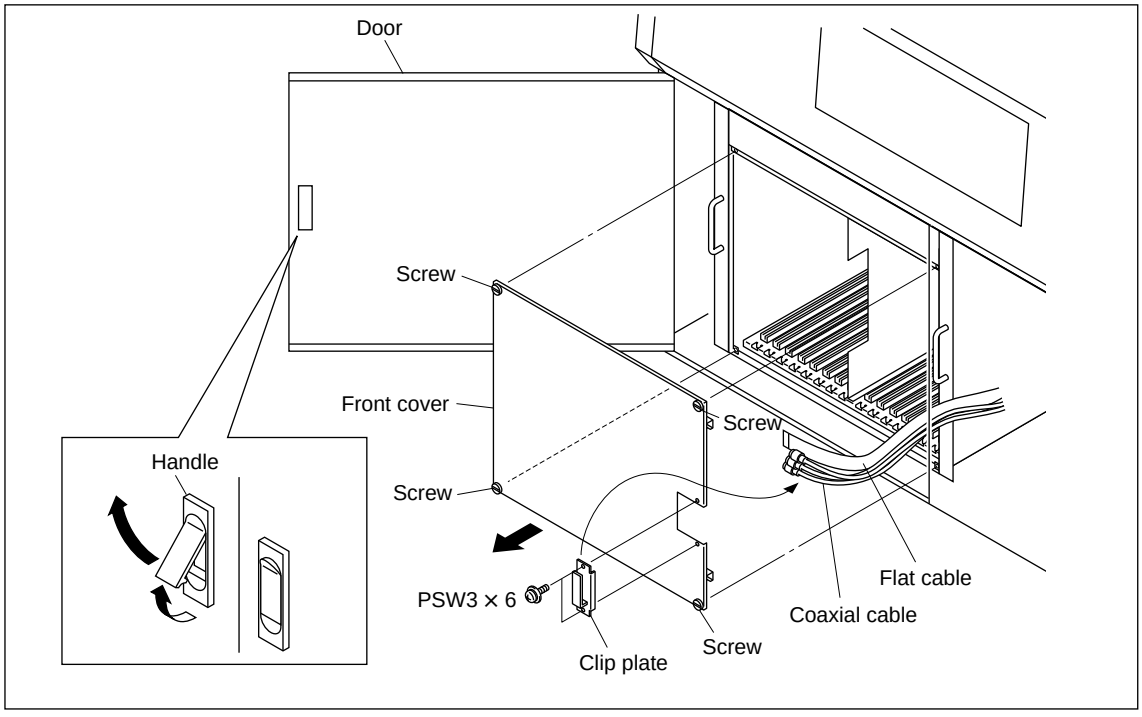
1. Pull the OPS cover toward you, then remove from the base plate.
2. Pass the reference pins through the holes on the OPS assembly, then fix it with the supplied four screws (M3 × 6) .
3. Connect the connector of the base plate with CN1 on the SE-515 board.
4. Adjust the hole at the rear of the OPS cover to the OPS support, push in the OPS support completely, and install to the base plate.



10. Installation of the FVS-P1000 and BKFV-100/200

Front side

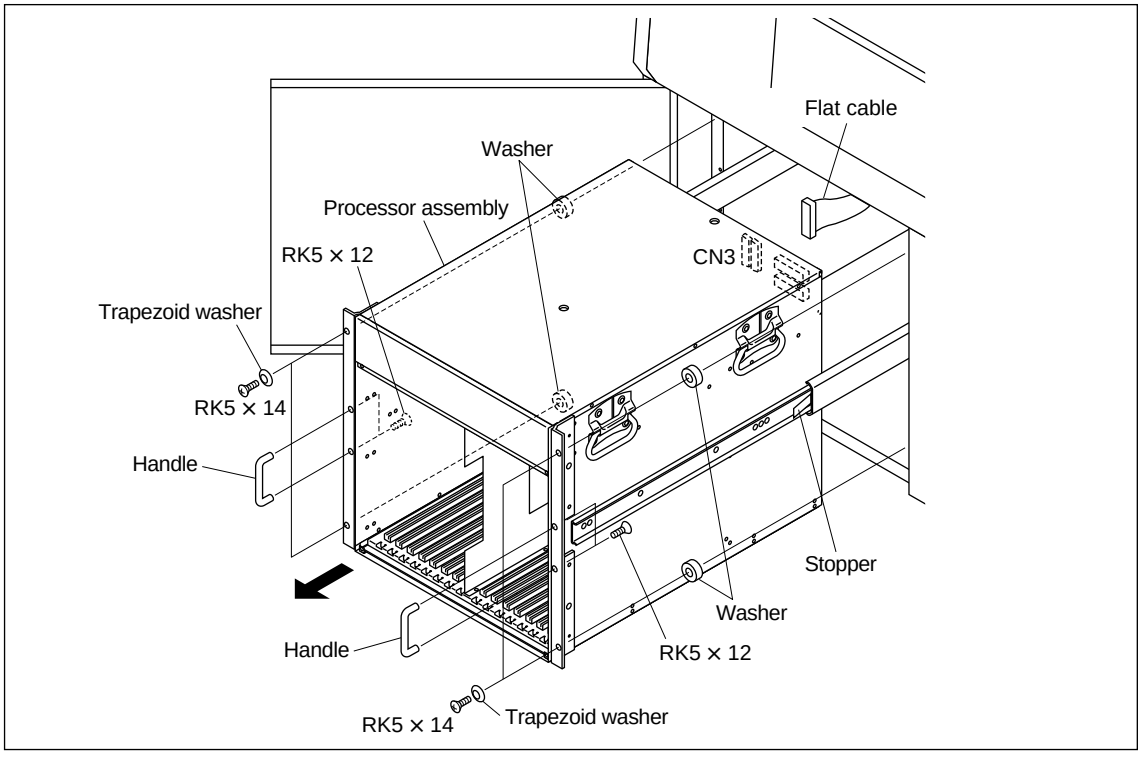
1. Open the lower front door of the FVS-1000.
2. Pull out the flat cable and the coaxial cable fixed to the front cover.
3. Loosen four screws, then remove the front cover.



4. Loosen the four screws (RK5 × 35), and remove the four washers for transportation.
   Note
   Store the removed washers for transportation.

5. Pull out the processor assembly (5 cm).
6. Remove the connector CN3 (rear) of the processor assembly from the rear of the unit.
7. Pull out the processor assembly to the position hooking the stopper.
8. Install the handles provided with the unit using the two screws respectively (RK5 × 12).
9. Push in the processor assembly completely.
   Note
   Firmly push in the two power connectors of the processor assembly to the connectors of the unit until they connect.

10. Connect the connector CN3 (rear) of the processor assembly from the rear of the unit.
11. Secure the processor assembly with the four screws and trapezoid washer.



12. Insert the processor board along the guide rail.

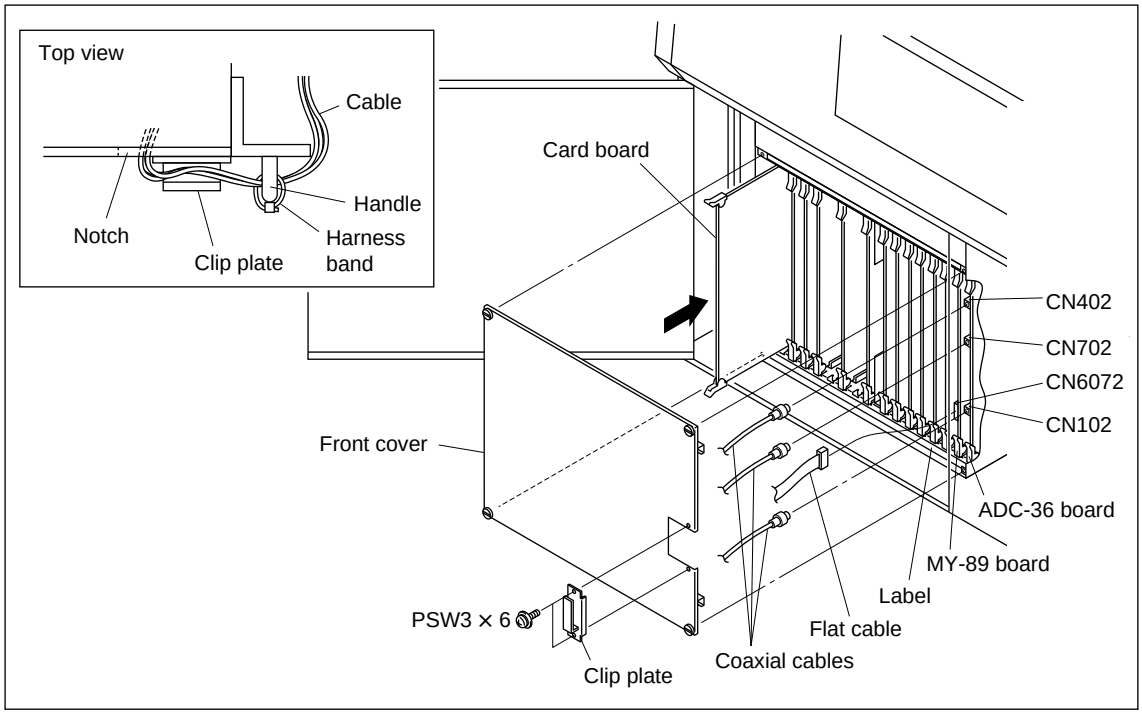
Note

- When inserting the processor board, confirm the processor board name on the label.
- Insert the processor board completely until the connector is connected.

13. Connect the flat cable with the CN6027 connector on the MY-89 board.
14. Connect the three coaxial cables with the CN402, 702 and 120 connectors on the ADC-36 board.
15. Install the front cover, then tighten four screws.

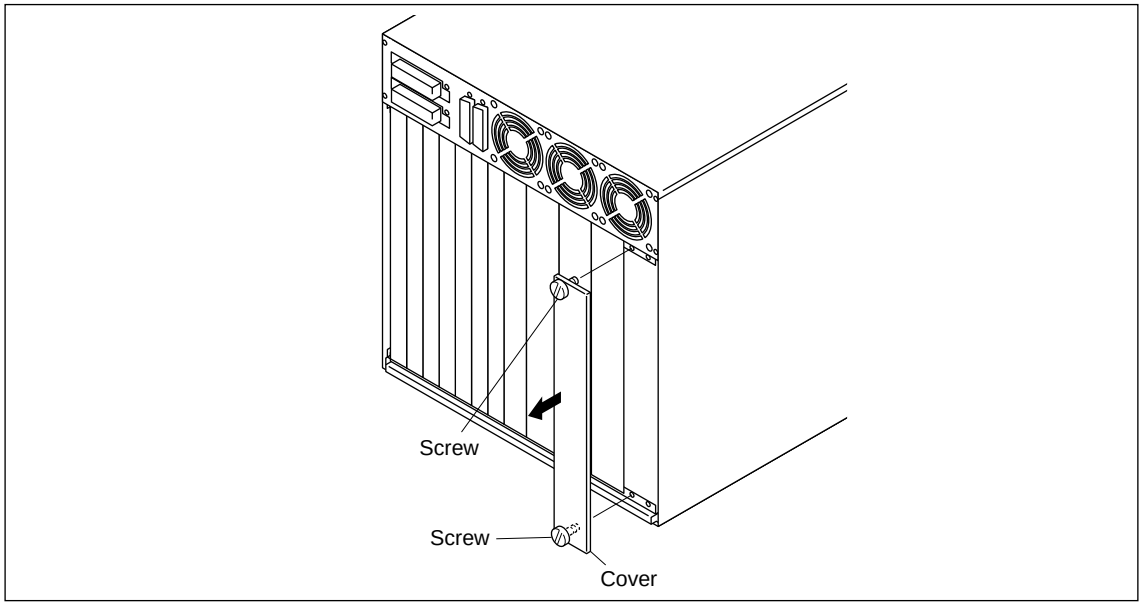
Note

Pull out the flat cable and the coaxial cables connected with the processor boards through the notch of the front panel, then fix with the clip plate and two screws (PSW3 × 6).



Rear side

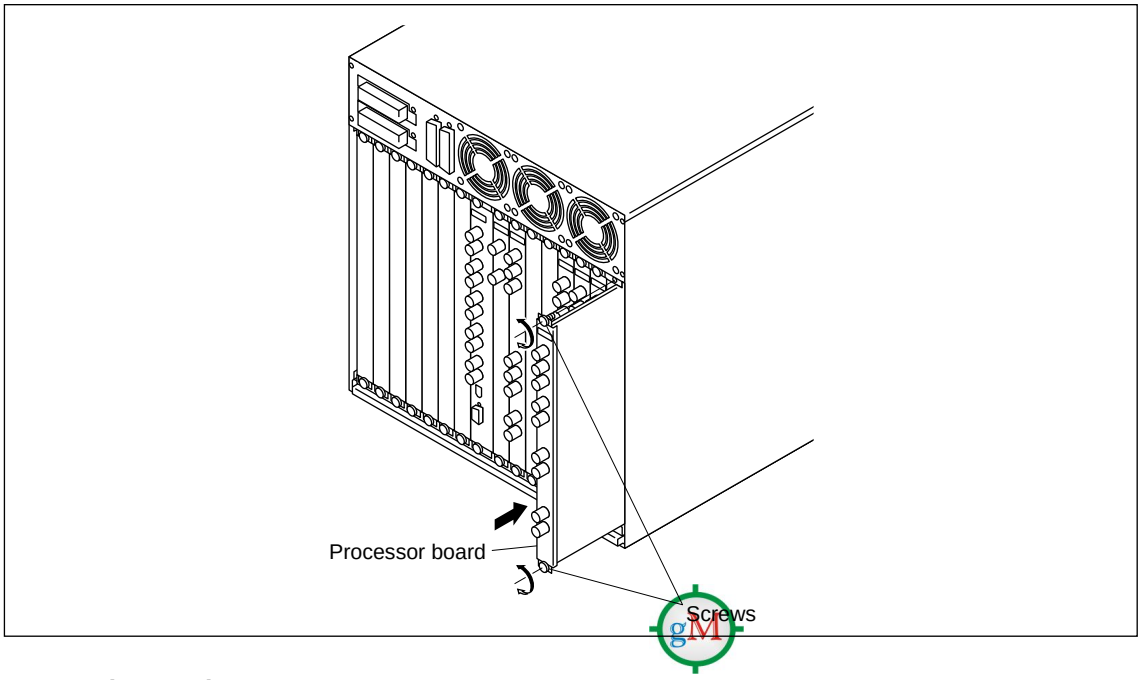
1. Remove the two screws, then remove the cover.



2. Insert the processor board along the guide rail.
3. Tighten the upper and lower knobs one after the other several times, then insert the connector completely until the connector is connected.

Note

Be sure to tighten the two screws one after the other.
If one screw is tightened completely first, there is a possibility of damaging the connector or screw.

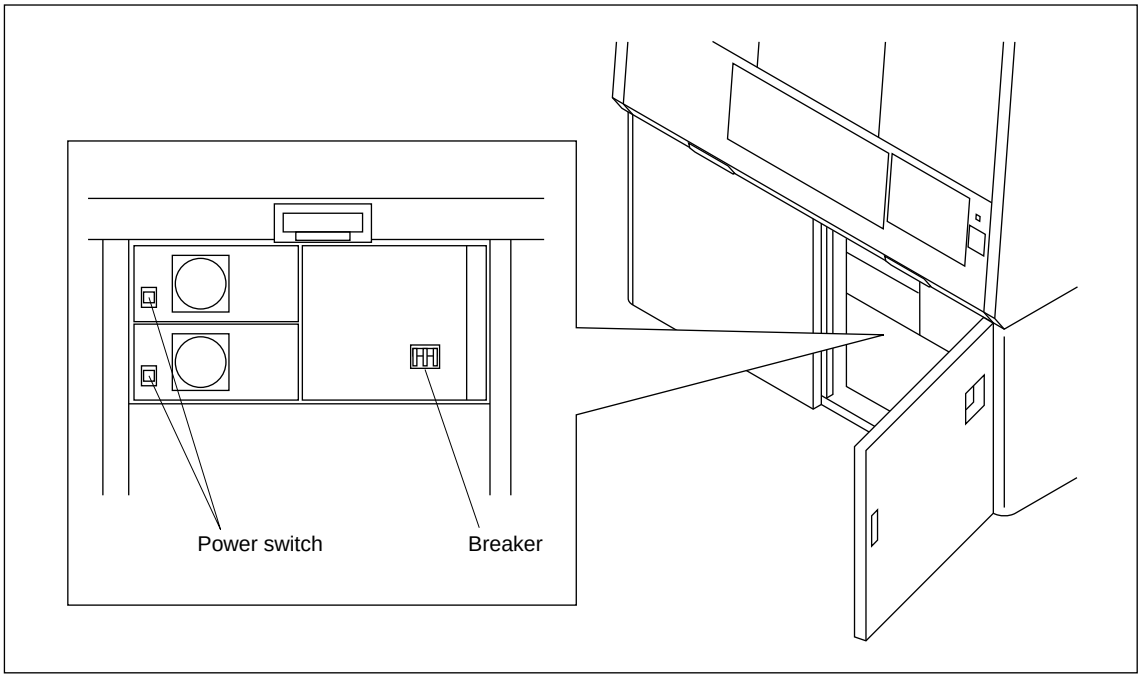


11. Turning on the power

1. Turn on the power of the external switchboard.
2. Open the lower front door of the FVS-1000, then turn on the breaker and the power switch.

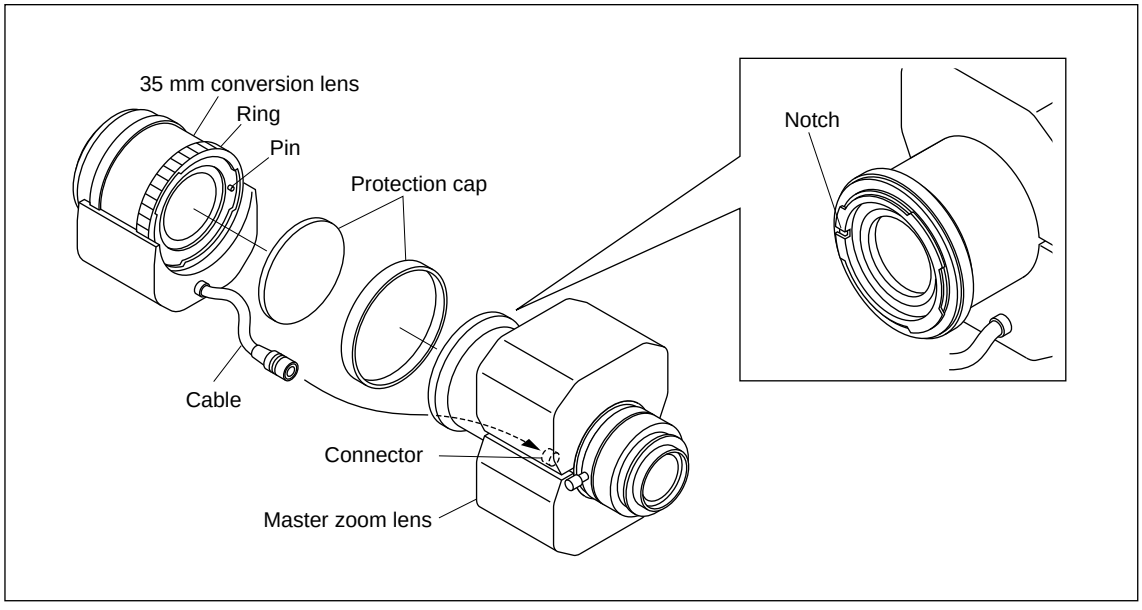
Reference

Once the power is turned on, unless the power switch is turned off, ON/OFF of the power is possible by only switching the breaker with the lower door closed.

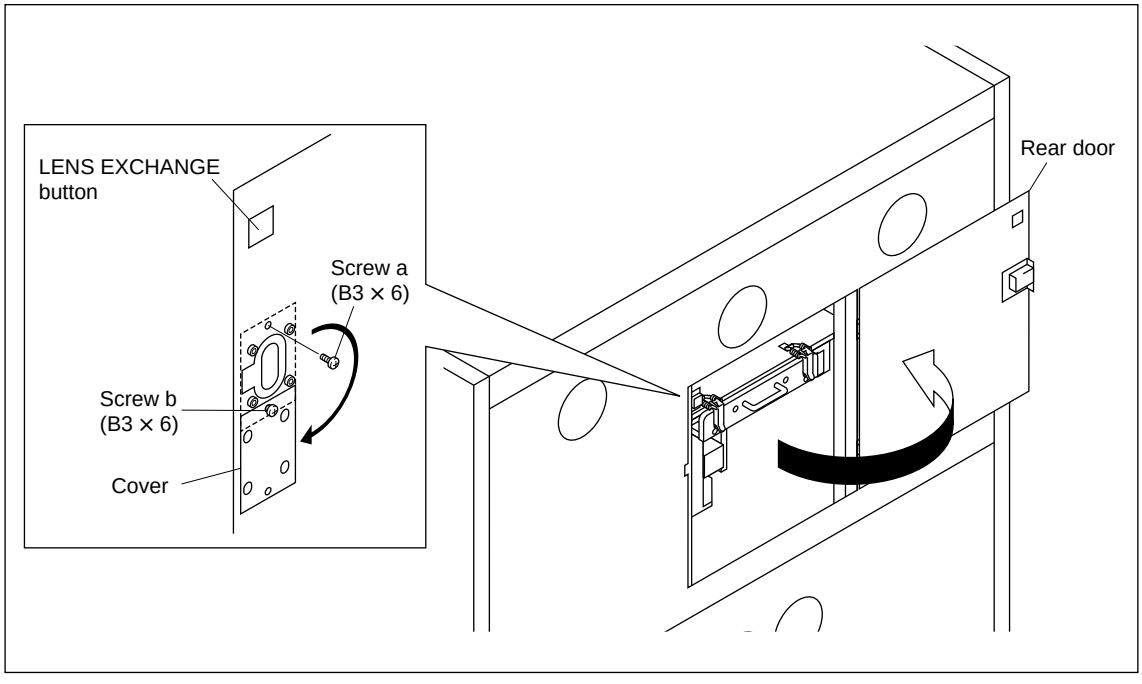


12. Installation of the lenses

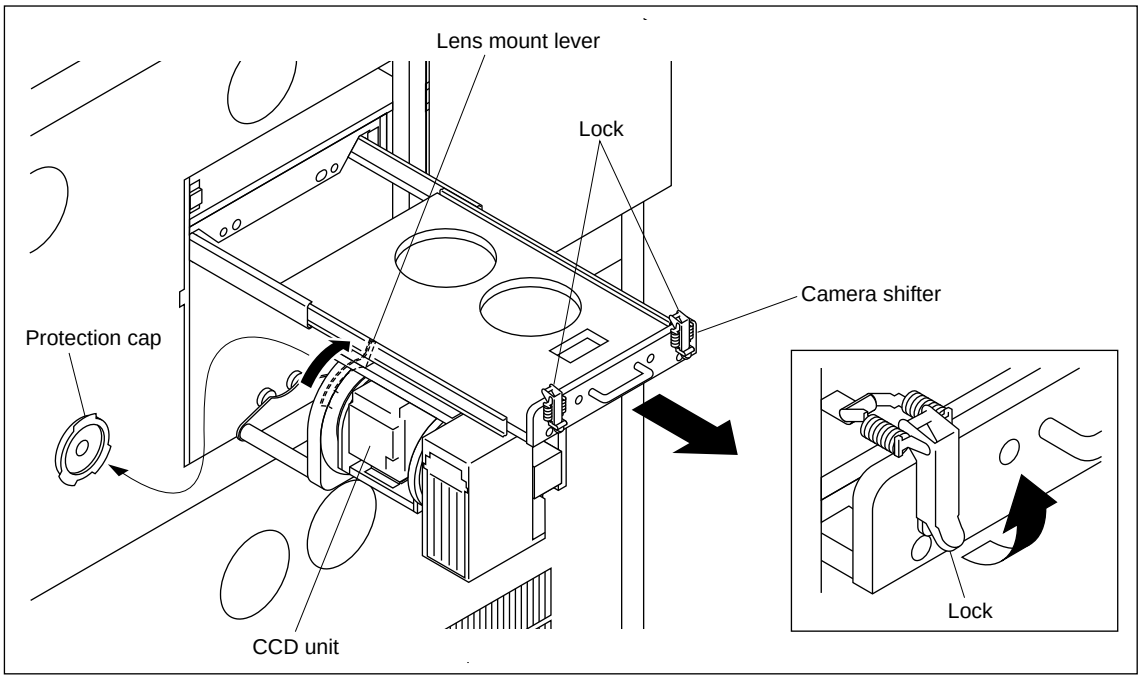
1. Combine the supplied 35 mm conversion lens and the master zoom lens.
   (1) Remove the protection cap of them.
   (2) Insert the pin of 35 mm conversion lens to the notch of the master zoom lens, then turn the ring until they are locked.
   (3) Connect the cable of 35 mm conversion lens with the connector of the master zoom lens.



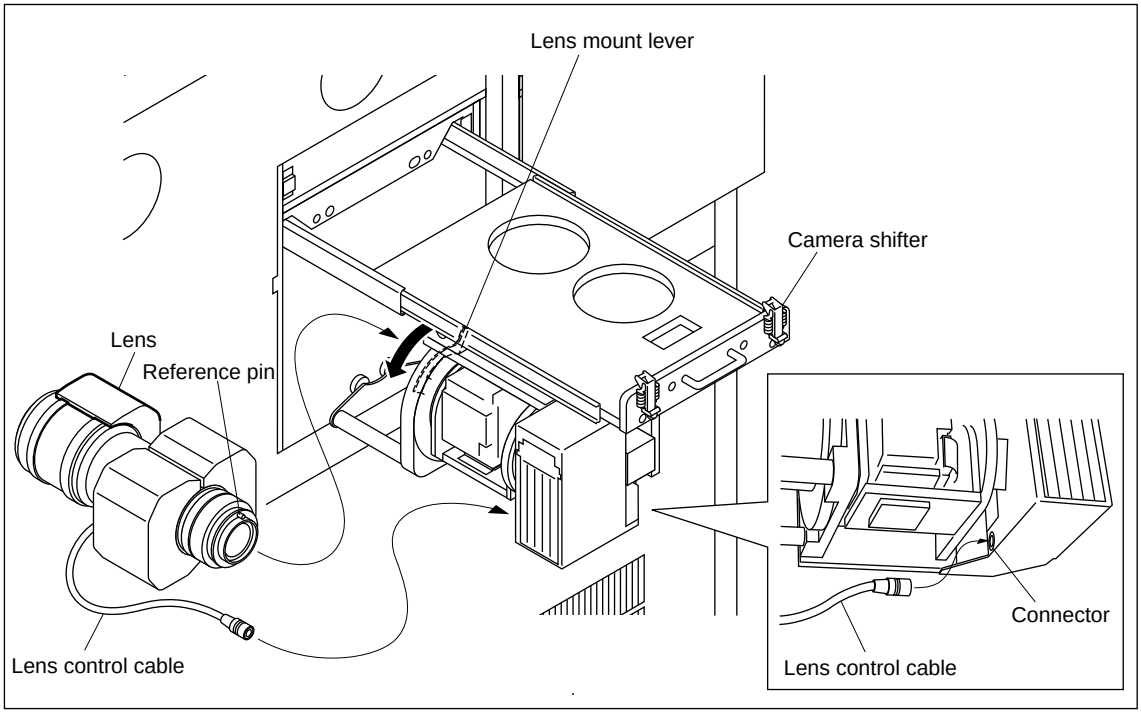
2. Remove the screw a (B3 × 6), then loosen the screw b (B3 × 6), and then open the cover on the rear door of the FVS-1000 in the direction of arrow.
3. Push the “LENS EXCHANGE” button.
4. Confirm that the lamp changes from flashing to lighting, then open the rear door.



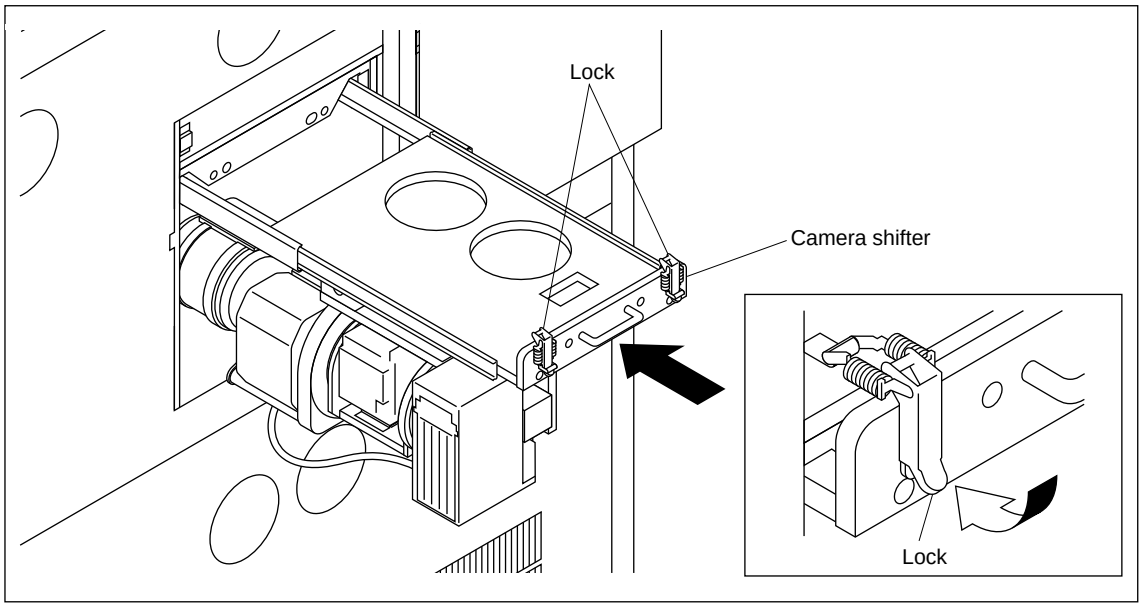
5. Release the lock, then pull out the camera shifter.
6. Turn the lens mount lever in the direction of arrow, then remove the protection cap from the CCD unit.



7. Install the lens of which the protection cap is removed to the CCD unit, then turn the mount lever in the direction of arrow as shown in the following figure to fix.
8. Connect the lens control cable with the connector of the camera shifter.



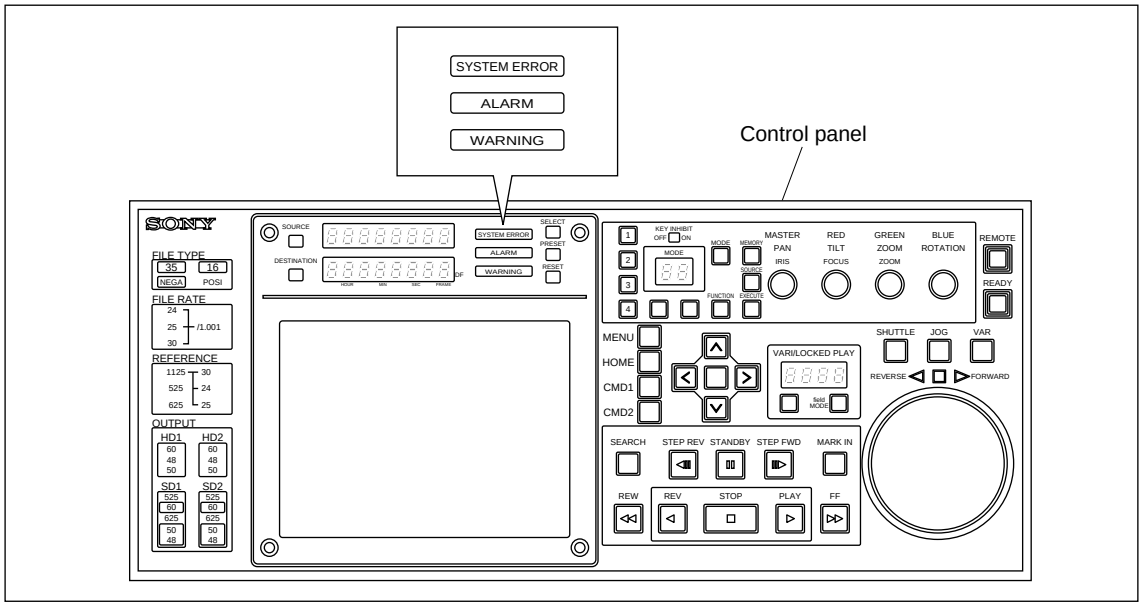
9. Insert the camera shifter, then tighten the lock.



10. Close the rear door.
11. Close the door opened in the procedure 2, then fix with the two screws.

13. Confirmation of the operation

Confirm that “SYSTEM ERROR”, “ALARM” and “WARNING” on the control panel do not light.



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Section 2
Service Overview

2-1. Operating Conditions

- Operating temperature : 10 ˚C to 35 ˚C (Recommended temperature range: 20 ˚C to 25 ˚C)
- Operating humidity : 20 % to 90 %
- Storage temperature : −20 ˚C to +55 ˚C
- Power consumption : 2.5 KW

2-2. Supplied Accessories

Packed into the FVS-T1000

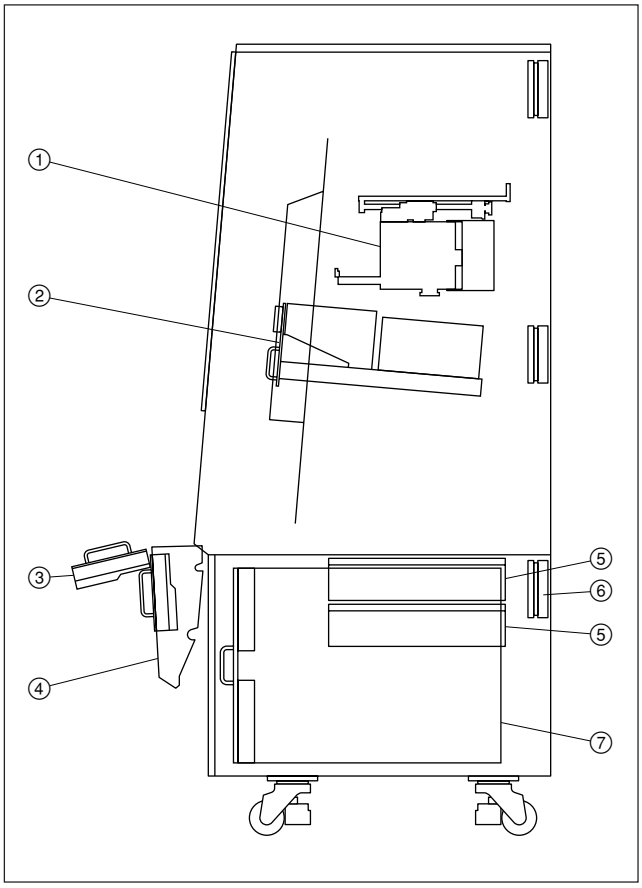
Description	Amount
Operation manual	× 1
Knob for spool	× 2
Maintenance manual	× 1
Control panel	
Control panel assembly	× 1
Plate	× 2
Screw (B × 10)	× 4
Screw (PSW4 × 10)	× 4
Lens	
35 mm conversion lens	× 1
Master zoom lens	× 1
OPS mirror	
OPS assembly	× 1
Screw (PSW3 × 6)	× 4
Air blow assembly	
Air blow assembly	× 1
Connecting elbow assembly	× 1
Coupler	× 1
Draining tube (ø4) assembly	× 1
Processor	
Handle	× 2
Screw (RK5 × 14)	× 4
Vibration-proof pad	× 6

Packaged into FVS-P1000

Description	Amount
Extension board (EX-632)	× 1
Extension board (EX-670)	× 1

2-3. Location of Main Parts

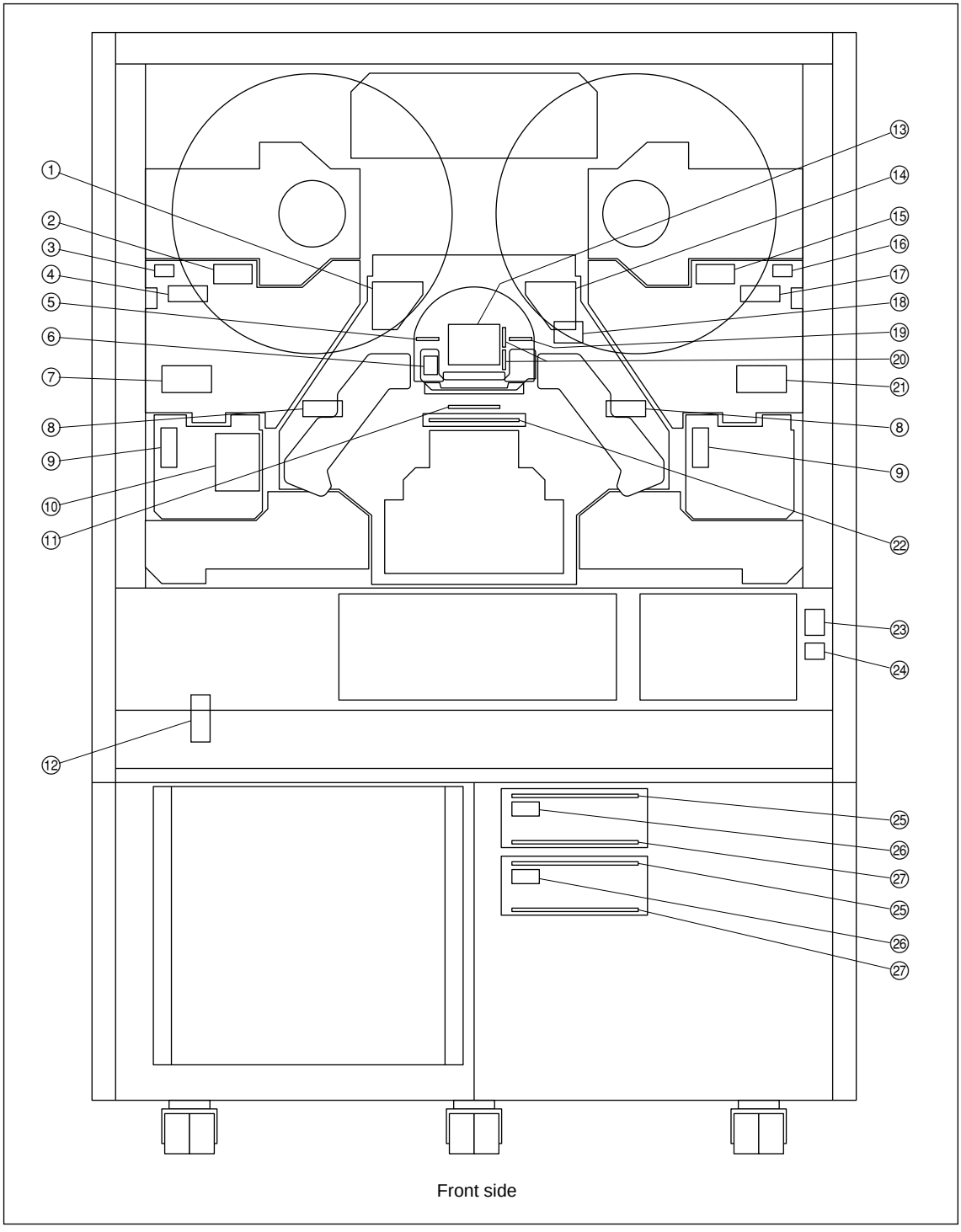
2-3-1. Location of Main Blocks



Number	Name of block
①	Camera shifter
②	Lamp house
③	Control panel
④	Movable panel
⑤	Power supply for processor
⑥	Fan
⑦	Processor

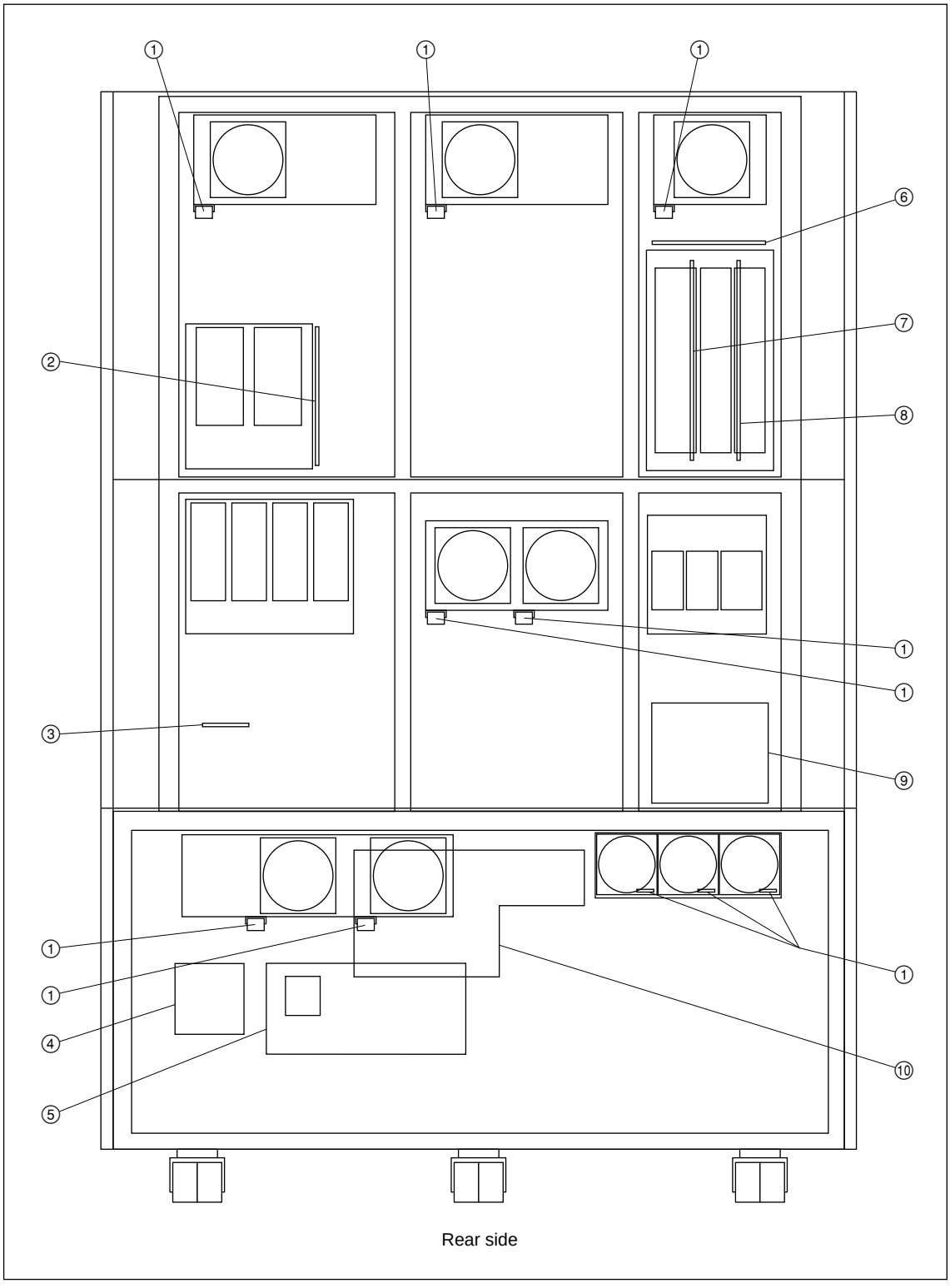
2-3-2. Location of Boards

FVS-T1000 (Front panel)



Name of board	Number
SW-989 board	㉑
CN-1745 board	⑩
SE-535 board	③
SE-536 board	⑯
SW-1004 board	㉔
PS lamp assembly	—
CN-1849 board	⑫
Power supply assembly	—
RE-136 board	㉕
RE-137 board	㉗
LE-186 board	㉖
Base plate assembly	—
CN-1622 board	①
CN-1623 board	⑭
SE-448 board	⑲
SE-449 board	⑤
CN-1815 board	⑪
SW-16 board	⑥
SE-446 board	⑧
SE-445 board	⑱
Tension regurator (S) assembly	—
CN-1747 board	⑦
CN-1749 board	②
SE-446 board	④
Tension regurator (T) assembly	—
CN-1748 board	㉑
CN-1749 board	⑮
SE-446 board	⑰
PT assembly	—
SE-446 board	⑨
OPS assembly	—
SE-514 board	⑳
SE-515 board	⑬
Gate base (35) assembly	—
SE-516 board	㉒

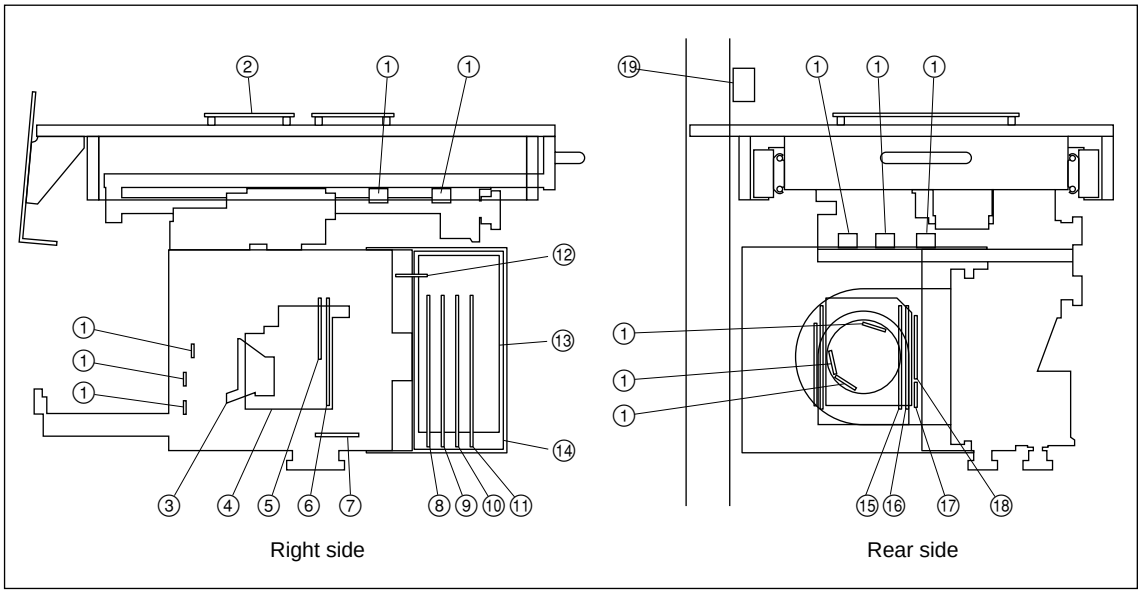
FVS-T1000 (Rear panel)



Rear side

Name of board	Number
RM-174 board	⑤
CN-1763 board	①
CN-1835 board	③
DD-33 board	⑩
SV-186 board	⑥
SV-191 board	⑦
SV-192 board	⑧
SE-520 board	②
VS-60 board	⑨
ES-30 board	④

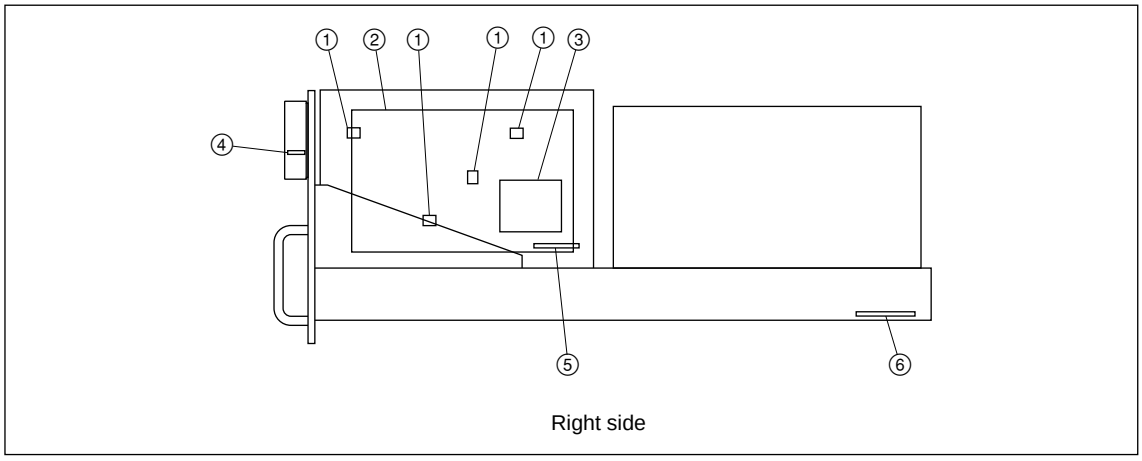
Camera shifter assembly



Name of board	Number
Camera shifter assembly	—
DR-384 board	⑰
CN-1766 board	⑦
SE-501 board	①
CN-1746 board	②
SW-13 board	⑲
Camera board assembly	—
PS-419 board	⑫
MB-815 board	⑭
PR-239 board	⑪
IF-693 board	⑬
SH-70 board	⑧
VA-158A board	⑨
MX-59 board	⑩

Name of board	Number
CCD block assembly	—
DU-1 board	⑱
PA-173 board	⑯
DR-376 board	④
NR-66 board	⑮
RP-108 board	⑥
TG-209 board	⑤
CN-1674 board	③

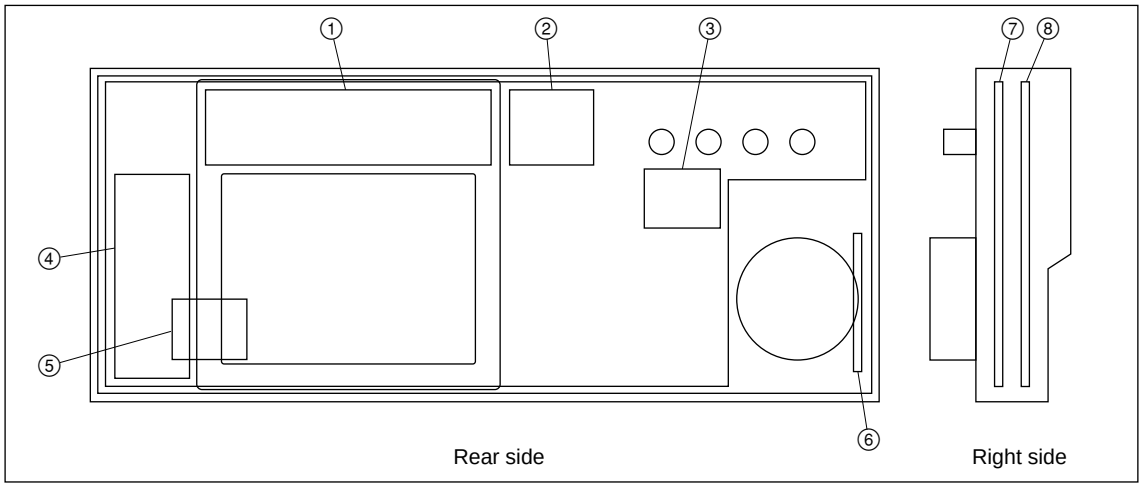
Lamp house assembly



Right side

Name of board	Number
SE-518 board	①
LC-35 board	②
CN-1833 board	③
SE-519 board	④
PD-91 board	⑤
CN-1849 board	⑥

Control panel assembly

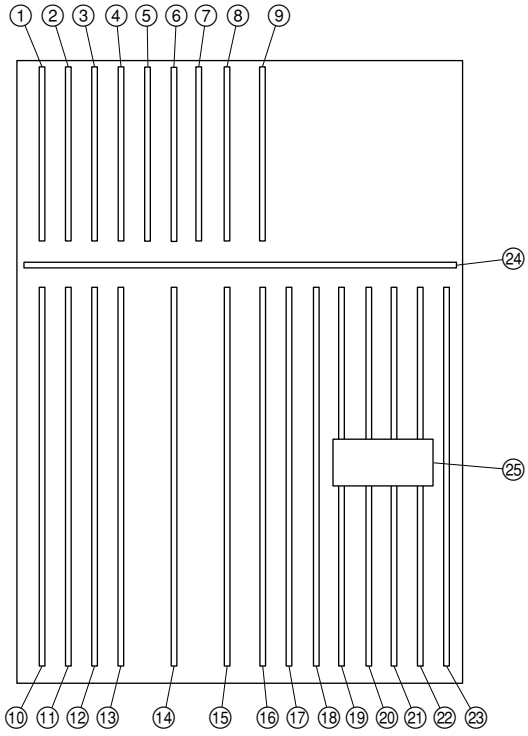


Rear side Right side

Name of board	Number
CN-1610 board	①
CN-1612 board	②
CN-1611 board	③
CN-1871 board	④
CN-1626 board	⑤
PTC-69 board	⑥
KY-423 board	⑦
CP-322 board	⑧

FVS-P1000 (processor)

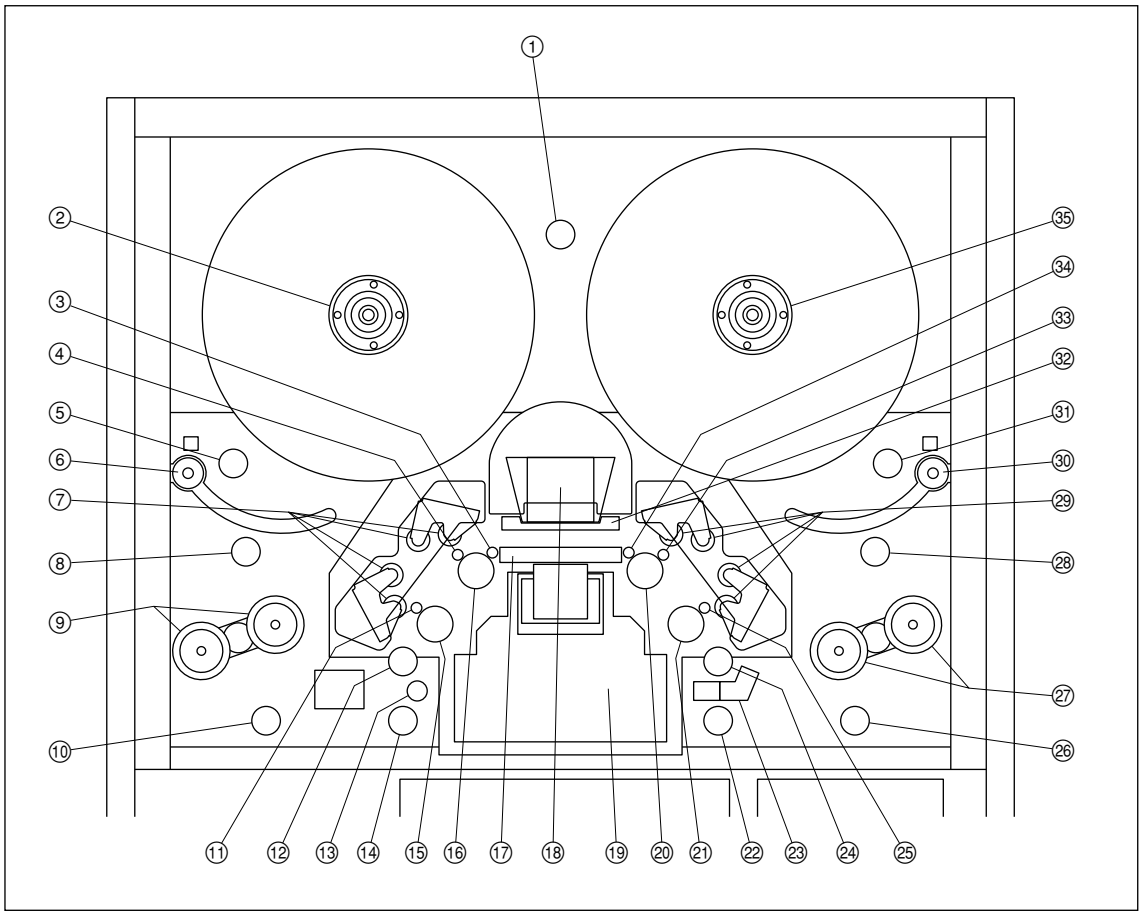
Location of processor boards



Top view

	FVS-P1000	FVS-T1000	OPTION BOARD			FVS-P1000	FVS-T1000	OPTION BOARD	
			BKFV-100	BKFV-200				BKFV-100	BKFV-200
①	TX-67	--	--	--	⑭	CN-1600	--	--	--
②	RX-45	--	--	--	⑮	CN-1600	--	DHP-10	--
③	--	--	--	TX-67	⑯	SY-256	--	--	--
④	--	--	--	RX-45	⑰	CN-1600	--	--	--
⑤	--	--	--	--	⑱	CN-1600	--	EN-137	--
⑥	--	--	--	--	⑲	VE-42	--	--	--
⑦	--	--	OPM-28	--	⑳	CC-78	--	--	--
⑧	--	--	IPM-85	--	㉑	CN-1600	--	--	--
⑨	TG-196	--	--	--	㉒	MY-89	--	--	--
⑩	CN-1600	--	--	DSP-81	㉓	ADC-36	--	--	--
⑪	CN-1600	--	--	DCP-20	㉔	--	MB-777	--	--
⑫	DSP-81	--	--	--	㉕	--	CN-1870	--	--
⑬	DCP-20	--	--	--					

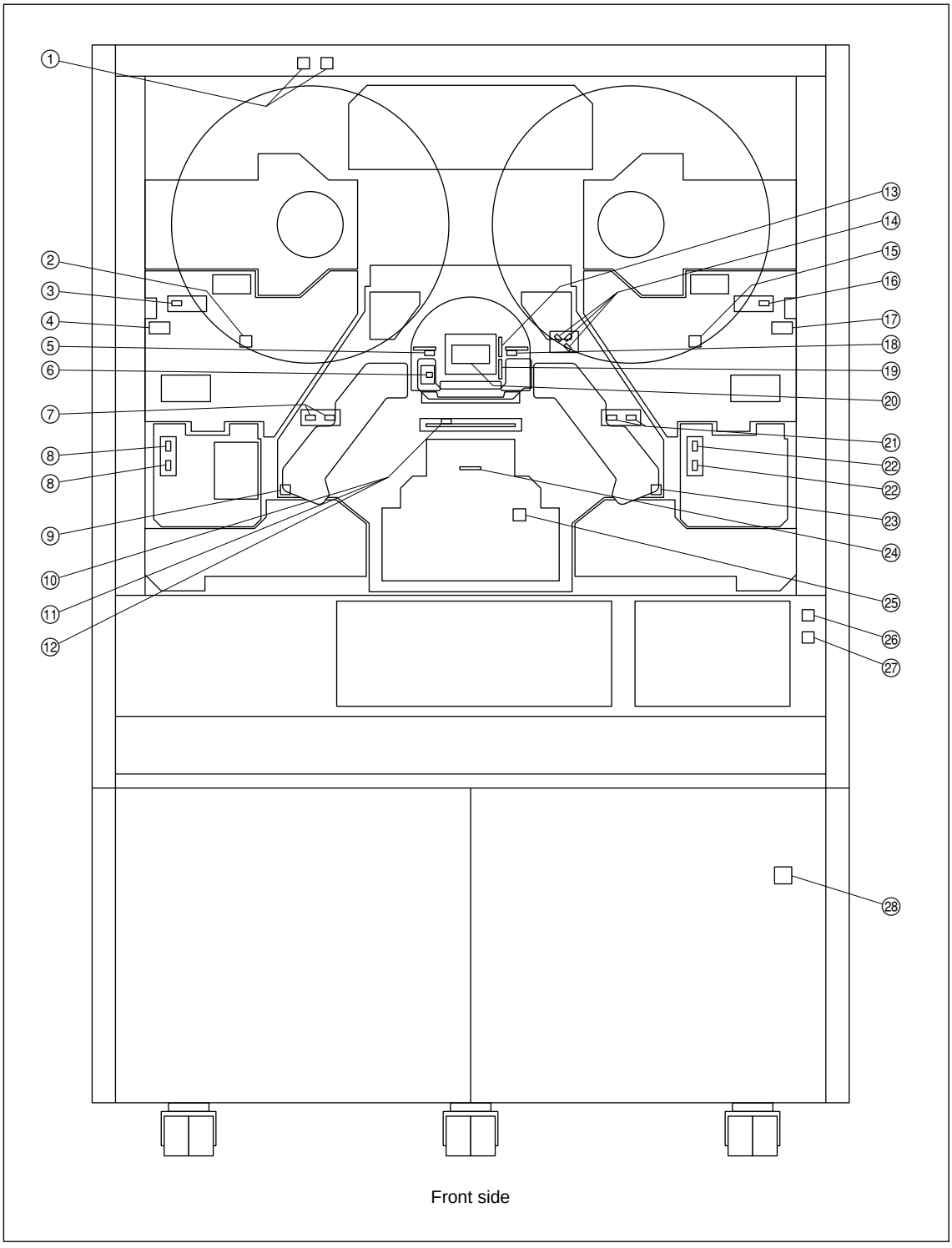
2-3-3. Location of Main Mechanical Parts



Number	Name of part
①	Guide roller 11
②	S side reel
③	Guide roller (S)
④	F guide roller (SI)
⑤	Guide roller 1
⑥	S side tension regulator
⑦	S side PAD roller
⑧	Guide roller 2
⑨	S side PT roller
⑩	Guide roller 3
⑪	F guide roller (SC)
⑫	Guide roller 5
⑬	S film stopper
⑭	Guide roller 4
⑮	S side continuous sprocket
⑯	S side intermittent sprocket
⑰	Gate base
⑱	OPS

Number	Name of part
⑲	Lamp house
⑳	T side intermittent sprocket
㉑	T side continuous sprocket
㉒	Guide roller 7
㉓	T side film stopper
㉔	Guide roller 6
㉕	F guide roller (TC)
㉖	Guide roller 8
㉗	T side PT roller
㉘	Guide roller 9
㉙	T side PAD roller
㉚	T side tension regulator
㉛	Guide roller 10
㉜	Retainer
㉝	F guide roller (TI)
㉞	Guide roller (T)
㉟	T side reel

2-3-4. Location of Sensors



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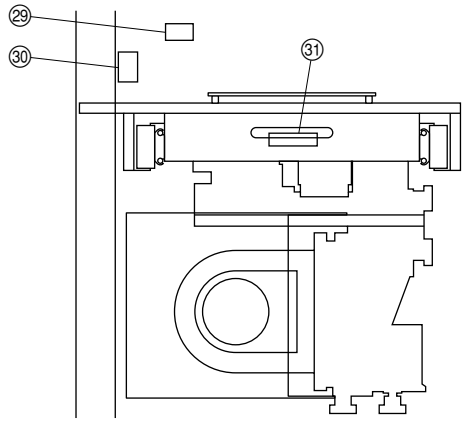


Rear side

Number	Sensor	Function
①	Front internal lock SW	The power is turned on by closing the front door.
②	S side tension regulator potential meter	This meter detects the rotation angle of the S side tension regulator arm.
③	S tension regulator position sensor	This sensor detects load and unload position of S tension regulator.
④	S side reel A/B winding SW	This switches A/B winding at the S side reel.
⑤	Lens emergency (Photo-diode)	This detects the lens position.
⑥	Gate (retainer) discrimination SW	This switch discriminates between 16 mm and 35 mm of the gate.
⑦	S side PAD roller position sensor	This sensor detects load and unload position of the S side PAD roller.
⑧	S side PT roller position sensor	This sensor detects load and unload position of the S side PT roller.
⑨	A side PAD TYPE SW	This switch discriminates between 16 mm and 35 mm of the S side PAD roller and detects whether the S side PAD roller is installed or not.
⑩	Electrostatic sensor	This sensor detects the film (perforations) position.
⑪	Gate TYPE SW	This switch discriminates between 16 mm and 35 mm of the gate and detects whether the gate is installed or not.
⑫	Slide adaptor detection SW	This switch detects the slide adaptor.
⑬	Mirror	
⑭	Gate position sensor	This sensor detects the load and unload position of the gate (retainer).
⑮	T side tension regulator potential meter	This meter detects the rotation angle of the T side tension regulator arm.
⑯	T side tension regulator position sensor	This sensor detects the load and unload position of the T side tension regulator.
⑰	T side reel A/B winding SW	This switches A/B winding at the T side reel.
⑱	Lens emergency (LED)	This detects the lens position.

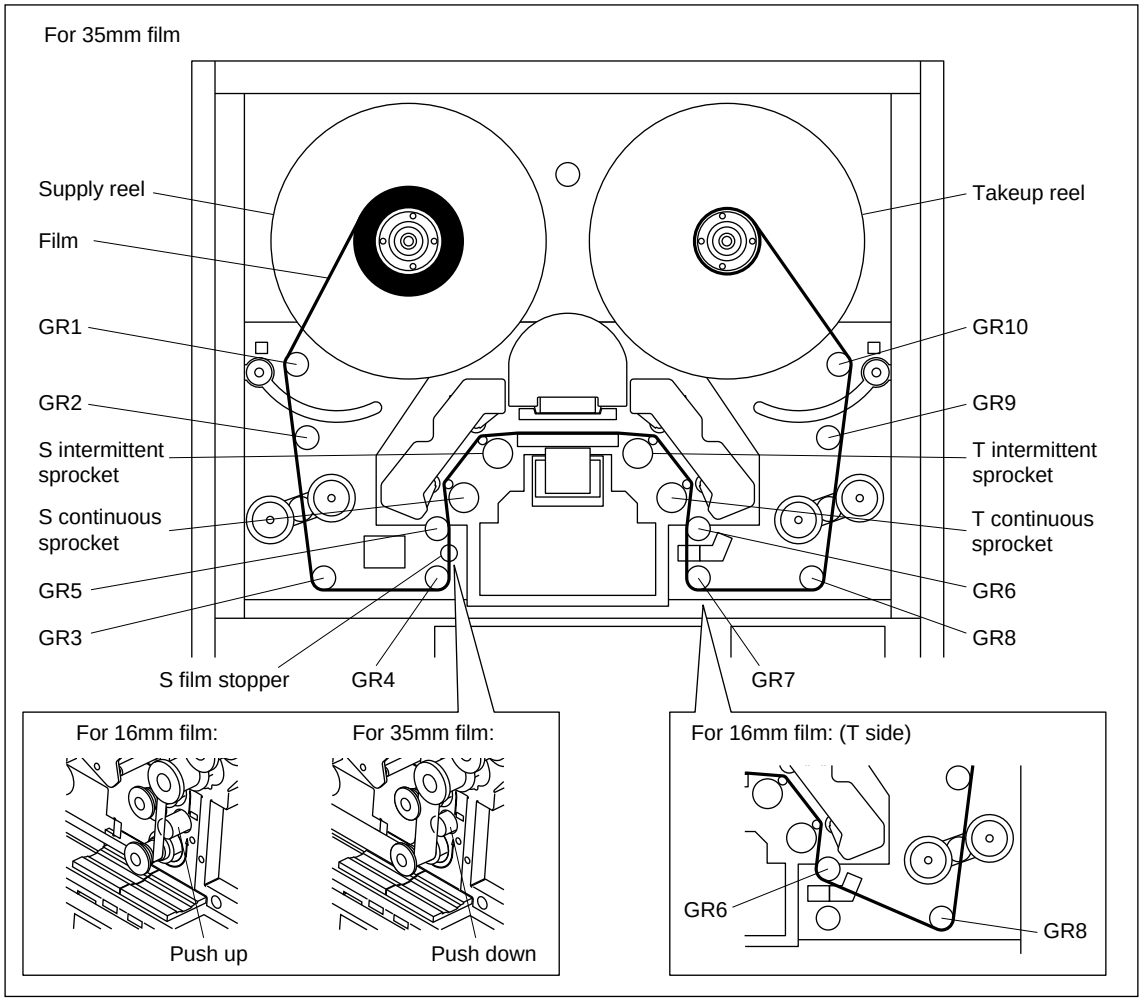
Number	Sensor	Function
⑲	OPS H direction glass sensor	This sensor detects the glass position in the horizontal direction of the OPS.
⑳	OPS V direction glass sensor	This sensor detects the glass position in the vertical direction of the OPS.
㉑	T side PAD roller position sensor	This sensor detects load and unload position of the T side PAD roller.
㉒	T side PT roller position sensor	This sensor detects load and unload position of the T side PT roller.
㉓	T side PAD TYPE SW	This switch discriminates between 16 mm and 35 mm of the T side PAD roller and detects whether the S side PAD roller is installed or not.
㉔	Integral ball discrimination sensor	This sensor discriminates among 16 mm, 35 mm and 8P of the integral ball.
㉕	Lamp SW	Emergency switch to turn off the lamp
㉖	STANDBY SW	Switch for STANDBY
㉗	SV RESET SW	Switch for servo reset
㉘	Breaker	Switch to turn on or off the system
㉙	Rear internal lock SW	When replacing the lens, the power is turned off by opening the rear door.
㉚	Lens load SW	When replacing the lens, the lens can be moved.
㉛	Camera shifter position sensor	This sensor detects whether the camera shifter is pulled out or not.

2-4. Film Threading

This unit is designed so that the film cannot be driven unless the front door is closed due to the danger of touching the film driven with the hand, etc.
For this reason, stop running when removing the film, and open the front door after standby off.

Notes

- Do not open the front door during film running.
  If opened, film running will stop instantaneously.
- For the FVS-1000, as the file is run by gearing the perforations of the film with the teeth of the sprocket, if the film has been spliced, be sure to open a perforation which suits the standard of the film.
  If there is not perforation, the film may be cut during running.
- Be sure to perform STANDBY ON or STANDBY OFF operations at the start or end of film winding.



1. Open the front door.
2. Set the supply reel and takeup reel.
3. Pull out the film from the supply reel, then feed it along the path shown in the above figure.
4. Wind the top of the film on the takeup side reel round two or three times.

   Note

   Do not fix the film to the center of the reel with adhesive tape.
   If the film is wound automatically, the film may be cut.
5. Close the front door.
6. Operate with the control panel.

2-5. Connecting Connector/Cable

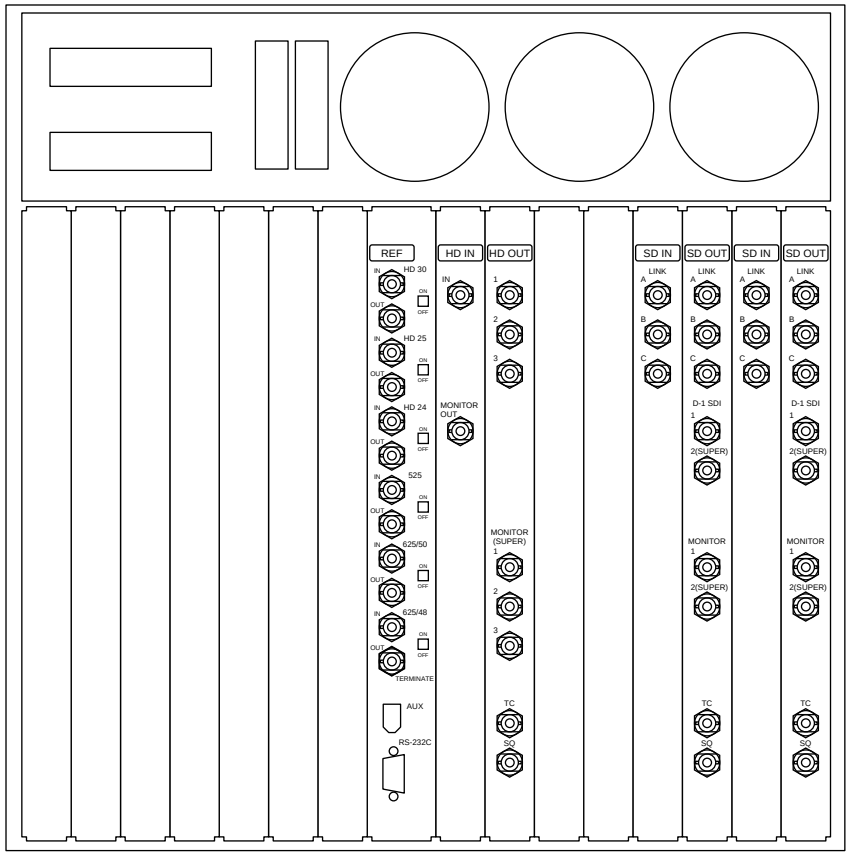
When connecting the cables with the connector on the connector panel, use the following connector/cable or equivalent.

Indication on the connector panel of FVS-1000	Name of connector/cable	Part number
REF HD30 IN/OUT HD25 IN/OUT HD24 IN/OUT 525 IN/OUT 625/50 IN/OUT 625/48 IN/OUT	BNC, 75 Ω, Male	—
AUX	6-pin, Female	—
RS-232C	D-sub 9-pin, Female	—
HD IN IN	BNC, 75 Ω, Male*1	—
MONITOR OUT	BNC, 75 Ω, Male	—
HD OUT 1/2/3	BNC, 75 Ω, Male*1	—
MONITOR (SUPER) 1/2/3 TC SQ	BNC, 75 Ω, Male	—
SD IN LINK A/B/C	BNC, 75 Ω, Male*2	—
SD OUT LINK A/B/C D1 SDI 1 D1 SDI 2 (SUPER) MONITOR 1 MONITOR 2 (SUPER)	BNC, 75 Ω, Male*2	—
TC SQ	BNC, 75 Ω, Male	—
REMOTE 1/2/3 AUX 1/2/3/4/6	9-pin remote control cable RCC-5G	—
PANEL	8-pin, Male	1-790-581-11
MONI OUT	RCA	—

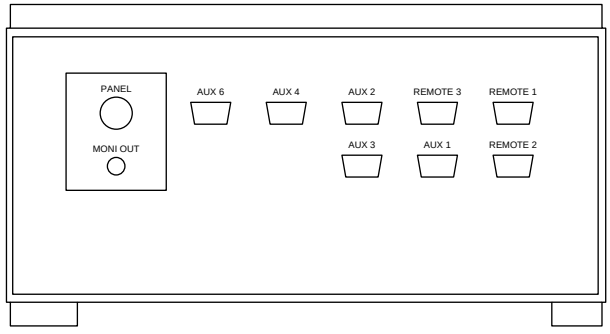
*1 : Maximum cable length : 100 m
As the coaxial cable, 5C-FB from Fujikura Corporation or equivalent is recommended.
*2 : Maximum cable length : 200 m
As the coaxial cable, 5C-FB from Fujikura

2-6. Input and Output Signals of Connectors

Rear side of FVS-P1000

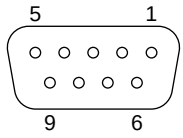


Connector panel



Indication on the connector panel of FVS-1000	Connector type and input/output signals
REF HD30 IN/OUT : HD25 IN/OUT : HD24 IN/OUT :	BNC 0.6 V p-p, 75 Ω, TRI SYNC
525 IN/OUT : 625/50 IN/OUT : 625/48 IN/OUT :	BNC 0.286 V p-p, 75 Ω, Black burst
HD IN IN : MONITOR OUT :	BNC HD serial digital (1.485 Gbit/sec), BTA S-004A
HD OUT 1/2/3 :	BNC HD serial digital (1.485 Gbit/sec), BTA S-004A
MONITOR (SUPER) 1/2/3 :	BNC HD serial digital (1.485 Gbit/sec), BTA S-004A
TC :	BNC Time code, TTL level
SQ :	BNC Sequence pulse, TTL level
SD IN LINK A/B/C :	BNC Serial digital (270 Mbits/sec), SMPTE 259M
SD OUT LINK A/B/C : D1 SDI 1 : D1 SDI 2 (SUPER) :	BNC Serial digital (270 Mbits/sec), SMPTE 259M
MONITOR 1 :	BNC Analog composite, NTSC/PAL switchable
MONITOR 2 (SUPER) :	BNC Analog composite, NTSC/PAL switchable (with superimposed text)
TC :	BNC Time code, TTL level
SQ :	BNC Sequence pulse, TTL level
MONI OUT :	RCA pin NTSC/PAL switchable

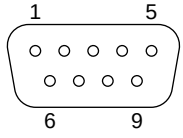
AUX 1/2/3/4 :
REMOTE 1/2/3 : RS-422A (D-sub 9-pin, Female)



- EXT VIEW -

Pin No.	Signal name	Contents
1	FRAME GND	—
2	TX–	Serial Remote Output
3	RX+	Serial Remote Input
4	GND	—
5	NC	—
6	GND	—
7	TX+	Serial Remote Output
8	RX–	Serial Remote Input
9	FRAME GND	—

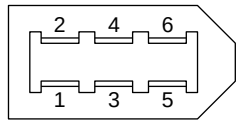
AUX 6 : ATTON (D-sub 9-pin, Female)



- EXT VIEW -

Pin No.	Signal name	Contents
1	TACO A+	TTL OUT
2	GND	—
3	GND	—
4	GND	—
5	TACO B+	TTL OUT
6	TACO B–	TTL OUT
7	GND	—
8	GND	—
9	TACO A–	TTL OUT

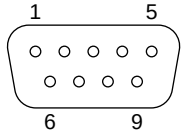
AUX : (6-pin, Male)



- EXT VIEW -

Pin No.	Signal name	Contents
1	+V	—
2	GND	—
3	TPA+	Serial Remote IN/OUT
4	TPA+	Serial Remote IN/OUT
5	TPB–	Serial Remote IN/OUT
6	TPB–	Serial Remote IN/OUT

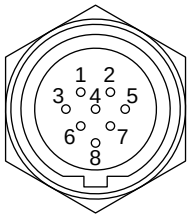
RS-232C : RS-232C (D-sub 9-pin, Male)



- EXT VIEW -

Pin No.	Signal name	Contents
1	CD	—
2	RXD	Serial Remote Input
3	TXD	Serial Remote Output
4	DTR	Serial Remote Output
5	GND	—
6	DSR	Serial Remote Input
7	RTS	Serial Remote Output
8	CTS	Serial Remote Input
9	NC	—

PANEL : RS-422 (8-pin, Female)



- EXT VIEW -

Pin No.	Signal name	Contents
1	FRM PULSE	Frame Pulse Output
2	PANEL S (–)	Serial Remote Input
3	PANEL C OUT (+)	Serial Remote Output
4	GND	—
5	+24 V	+24 V Output
6	GND	—
7	PANEL S (+)	Serial Remote Output
8	PANEL C OUT (–)	Serial Remote Input

2-7. Removing/Installing the Cabinet and FTP Panel

2-7-1. Removing/Installing the Side Panel and Top Panel

Removing/Installing the Side Panel (Top)

Removal

1. Remove the two screws of the left side panel (top).
2. Move the left side panel (top) in the arrow direction, and remove from the fixture.
3. Install the right side panel (top) in the same way.

Installation

4. Perform the reverse of steps 1 and 2 of the removal procedure.

Removing/Installing the Side Panel (Bottom)

Note

The side panel (bottom) cannot be removed without removing the side panel (top).

Removal

1. Remove the two screws of the left side panel (bottom).
2. Move the left side panel (bottom) in the arrow direction, and remove from the fixture.
3. Install the right side panel (bottom) in the same way.

Installation

4. Perform the reverse of steps 1 and 2 of the removal procedure.

Removing/Installing the Top Panel

Note

As the top panel is heavy, perform this procedure by two persons.

Removal

1. Remove the 10 fixing screws of the top panel.
2. Move the top panel in the arrow direction, and remove from the unit.

Installation

3. Perform the reverse of steps 1 and 2 of the removal procedure.

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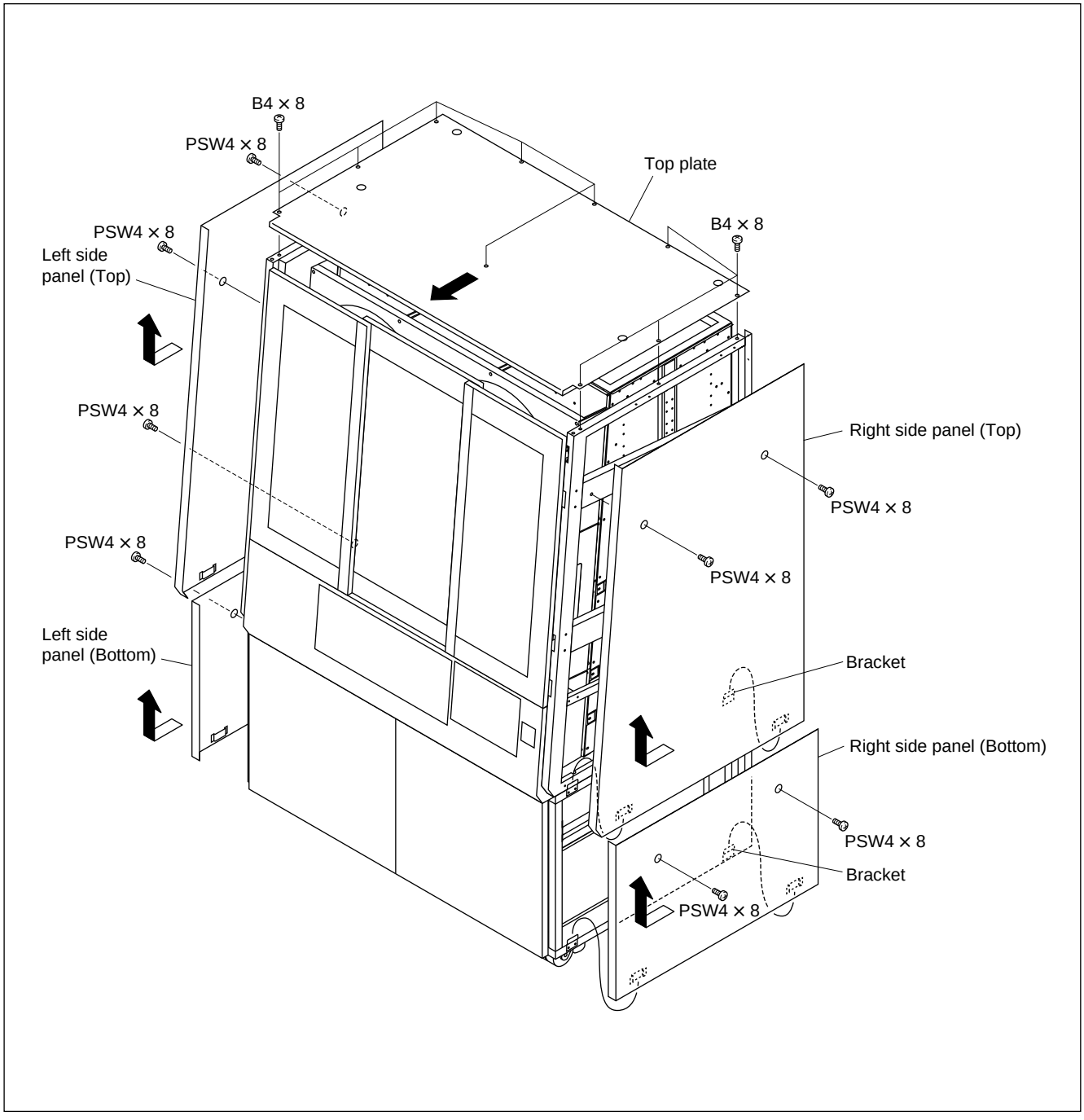


2-7-2. Removing/Installing the Rear Panel

Removing/Installing the Rear Panel (Top)

Removal

1. Remove the 13 screws and remove the rear panel (top).

Installation

2. Perform the reverse of the removal procedure.

Removing/Installing the Rear Panel (Middle)

Removal

1. Remove the 18 screws and remove the rear panel (middle).

Installation

2. Perform the reverse of the removal procedure.

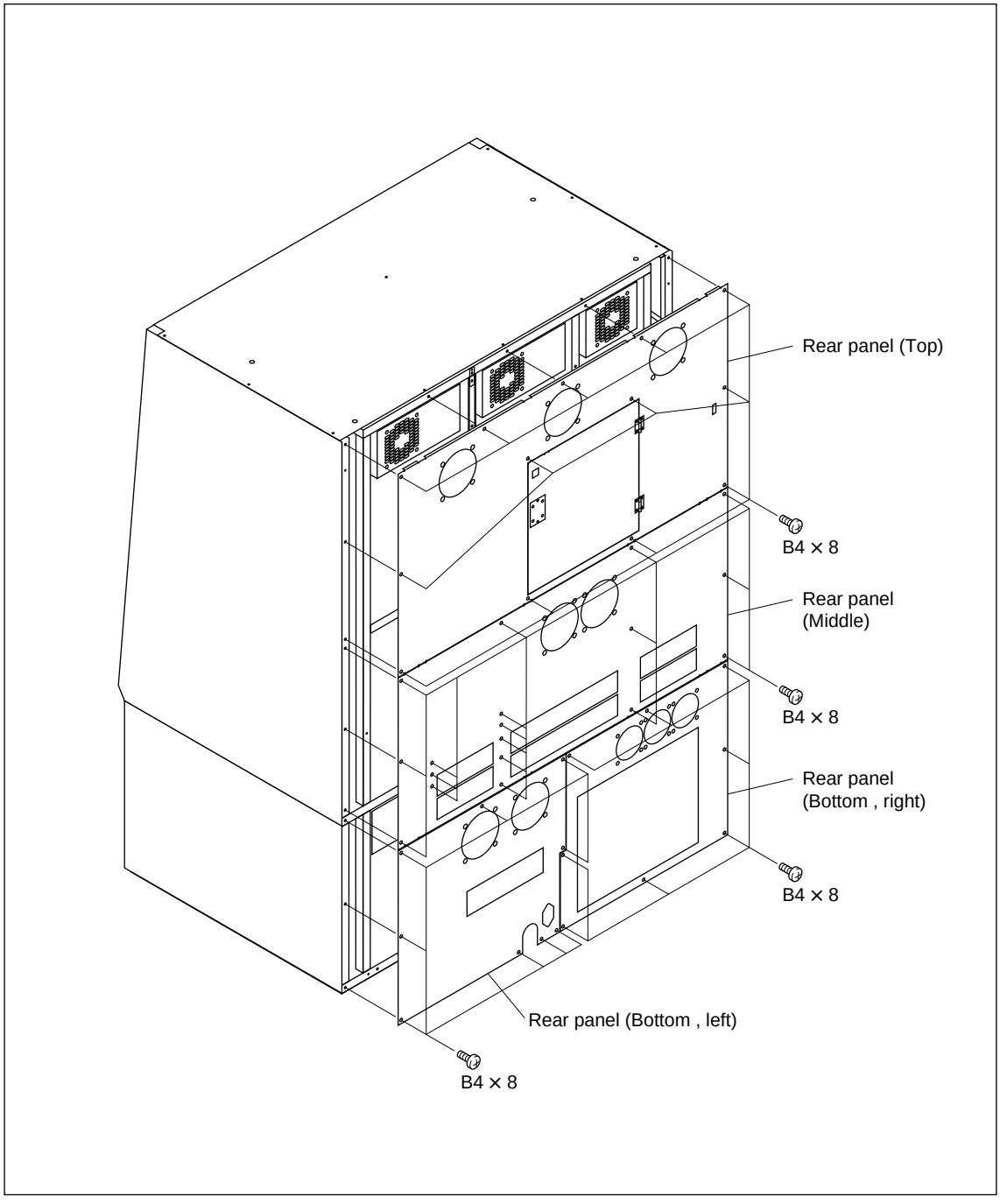
Removing/Installing the Rear Panels (Bottom Right, Bottom Left)

Removal

1. Remove the eight screws and remove the rear panel (bottom right).
2. Remove the eight screws and remove the rear panel (bottom left).

Installation

3. Perform the reverse of the removal procedure.


Rear panel (Top)
B4 × 8
Rear panel
(Middle)
B4 × 8
Rear panel
(Bottom , right)
B4 × 8
Rear panel (Bottom , left)
B4 × 8

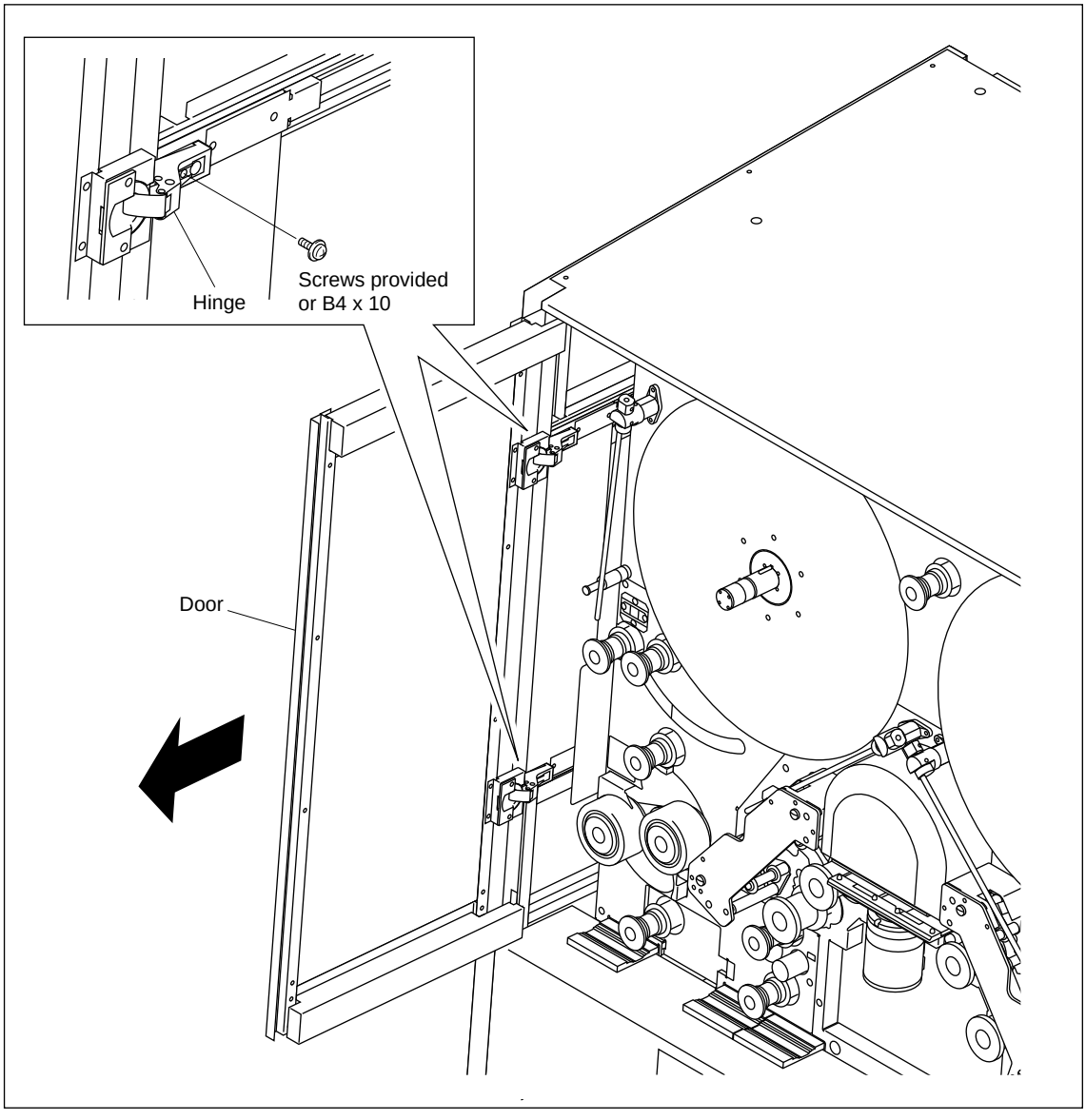
2-7-3. Removing/Installing the Door

Removal

1. Pull out the door.
2. Remove the hinges shown in the figure.

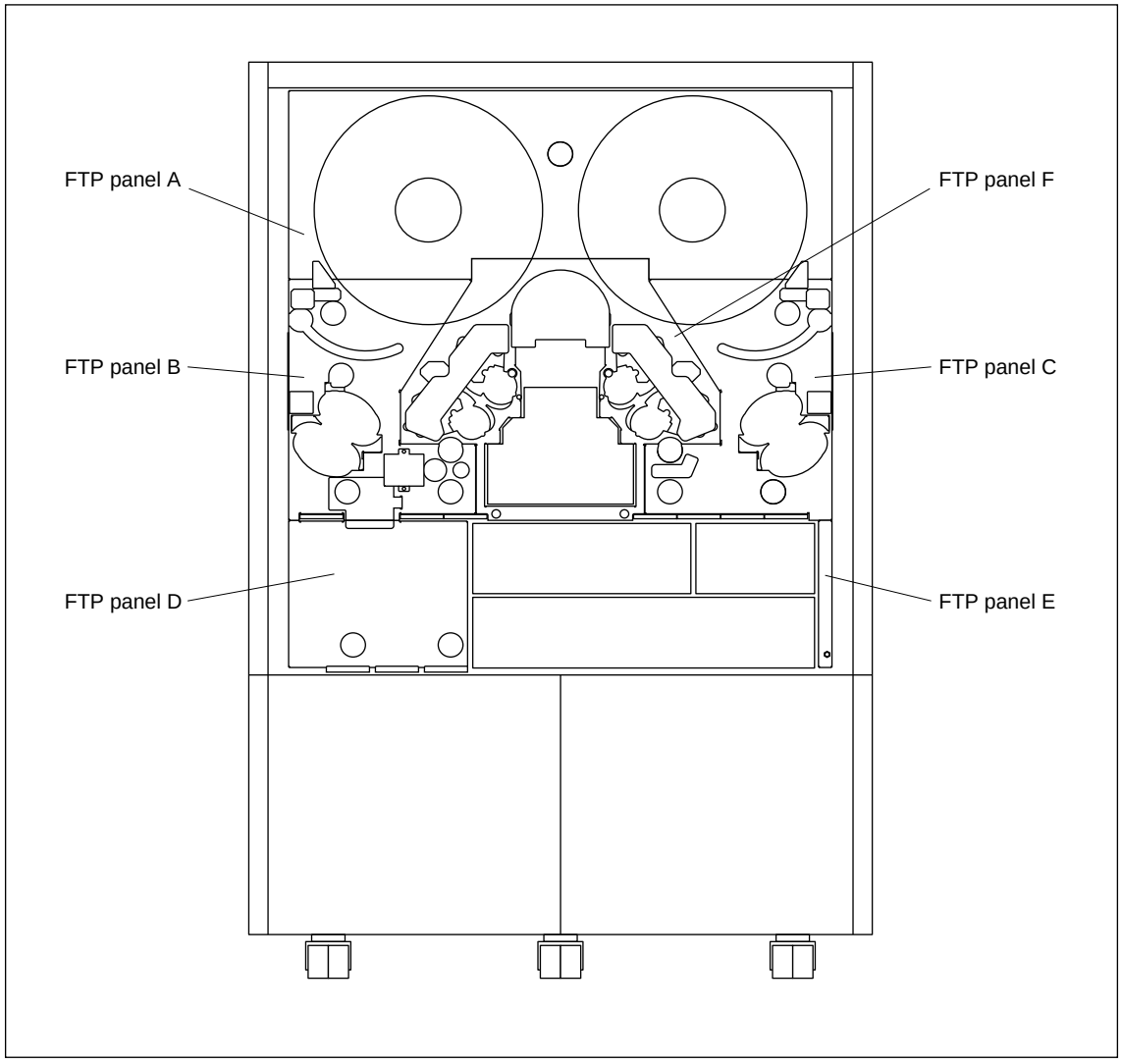
Installation

3. Perform the reverse of the removal procedure.



2-7-4. Removing/Installing the FTP Panel

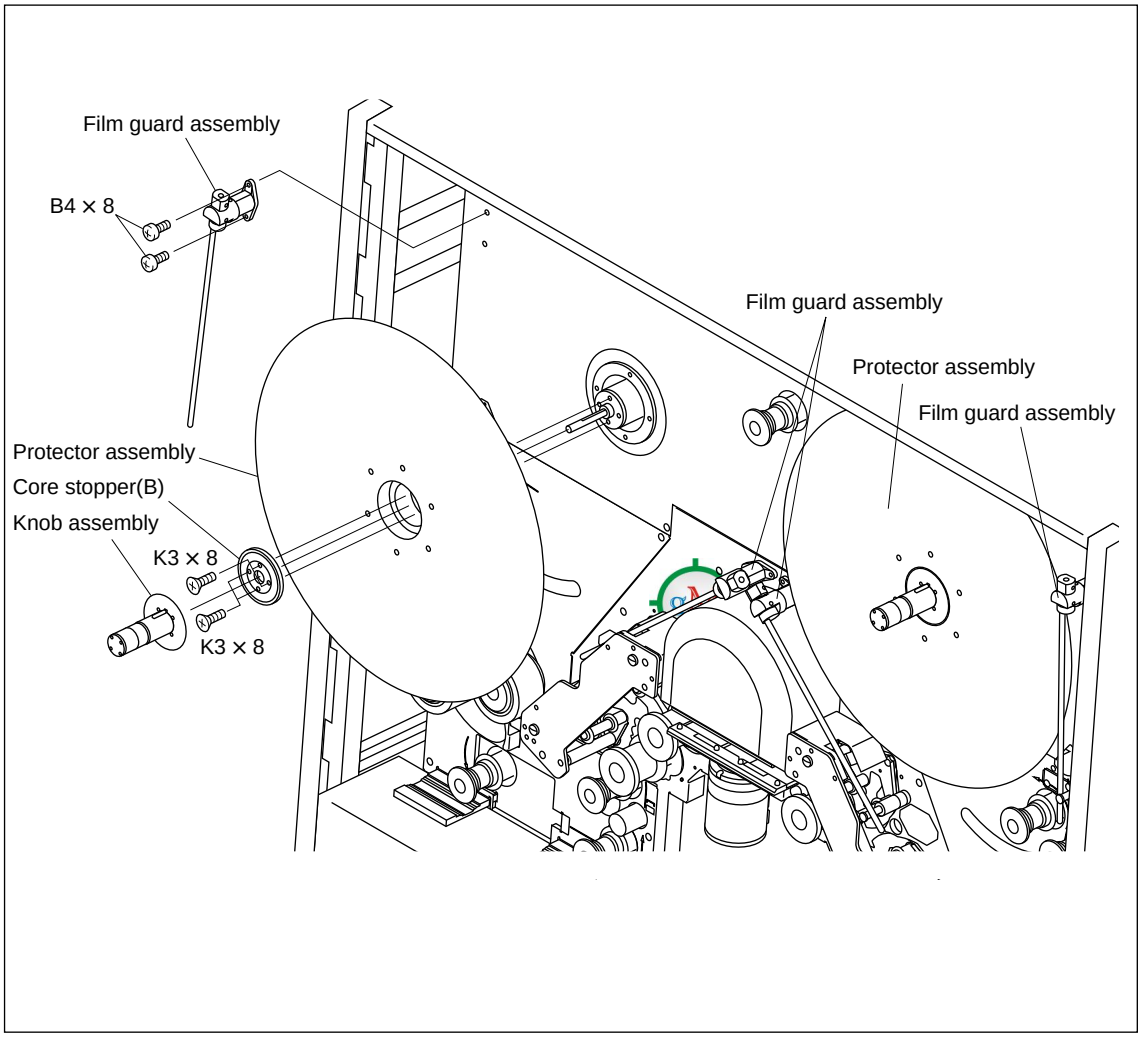
Layout of FTP panels



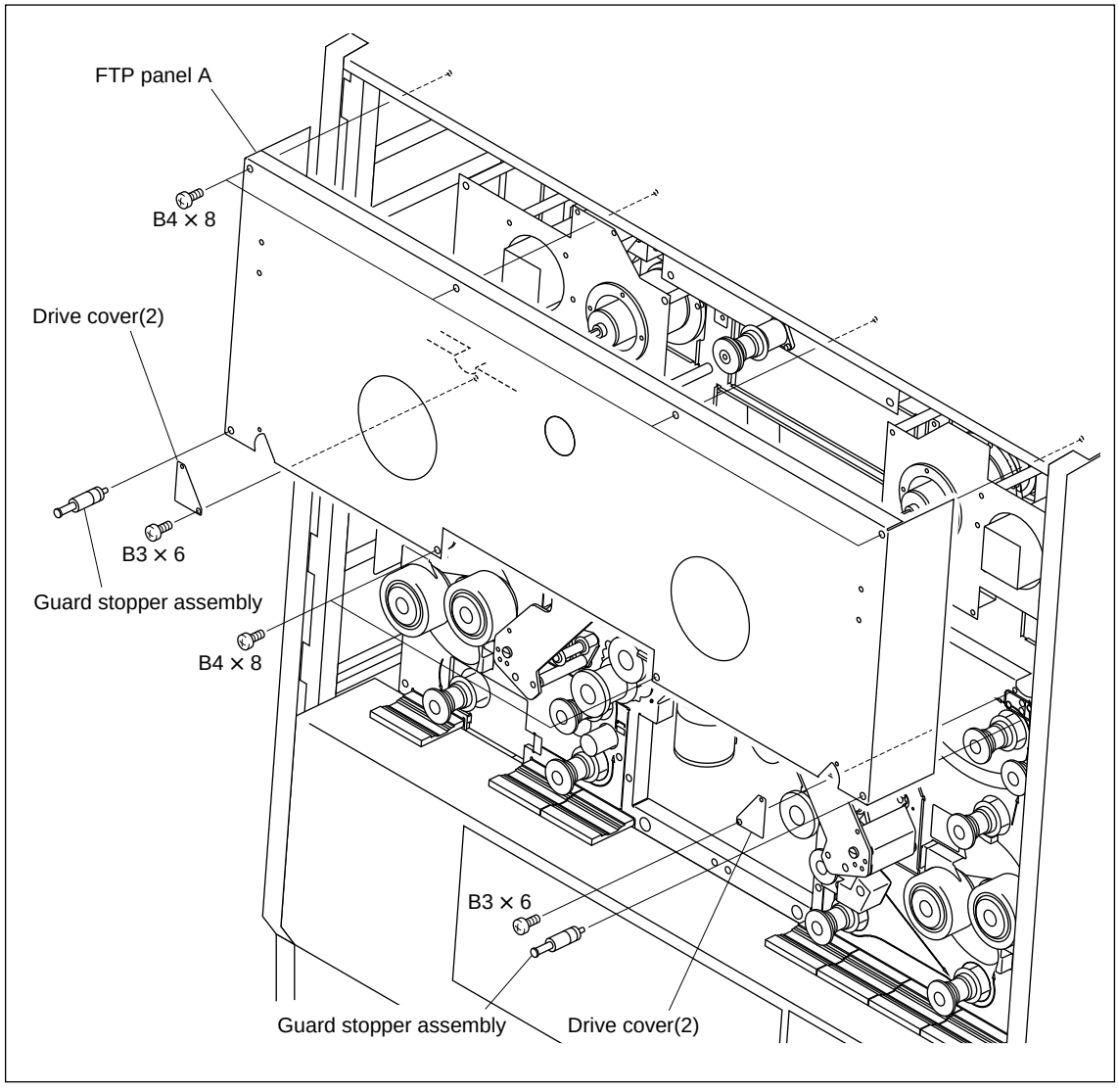
Removing/Installing the FTP Panel A

Removal

1. Rotate the knob assembly in the counterclockwise direction and remove it. (Both S, T)
2. Remove the four screws, and remove the core stopper (B). (Both S, T)
3. Remove the protector assembly. (Both S, T)
4. Remove the two screws, and remove the film guard assembly. (Both S, T, a total of four screws).



5. Remove the guard stopper assembly. (Both S, T)
6. Remove the drive cover (2). (Both S,T)
7. Remove the six fixing screwsl, and remove the FTP panel A.



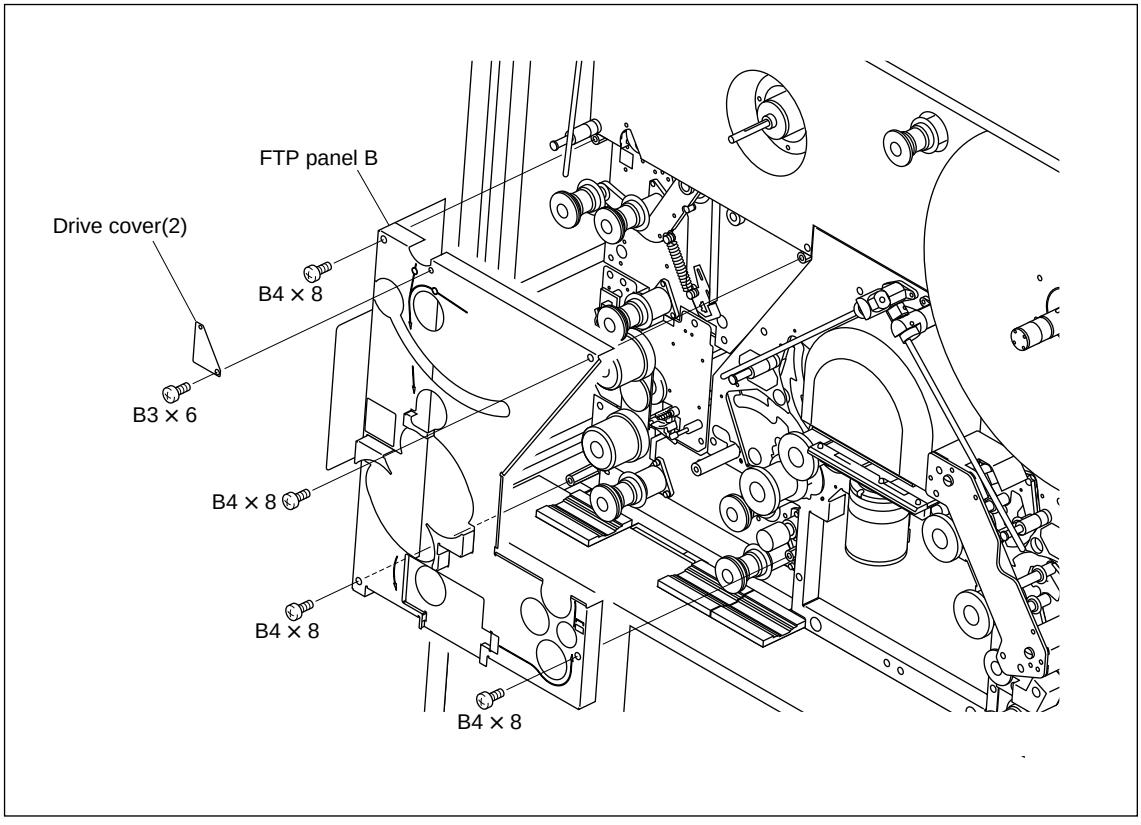
Installation

8. Perform the reverse of steps 1 to 7 of the removal procedure.

Removing/Installing the FTP Panel B

Removal

1. Rotate the knob assembly in the counterclockwise direction and remove it. (S side only) (Refer to ‘’Removing/Installing the FTP Panel A”.)
2. Remove the four screws, and remove the core stopper (B). (S side only) (Refer to ‘’Removing/Installing the FTP Panel A”.)
3. Remove the protector assembly. (S side only) (Refer to ‘’Removing/Installing the FTP Panel A”.)
4. Remove the two PT rollers. (S side only)
5. Remove the drive cover (2).
6. Remove the four fixing screws, and remove the FTP panel B.



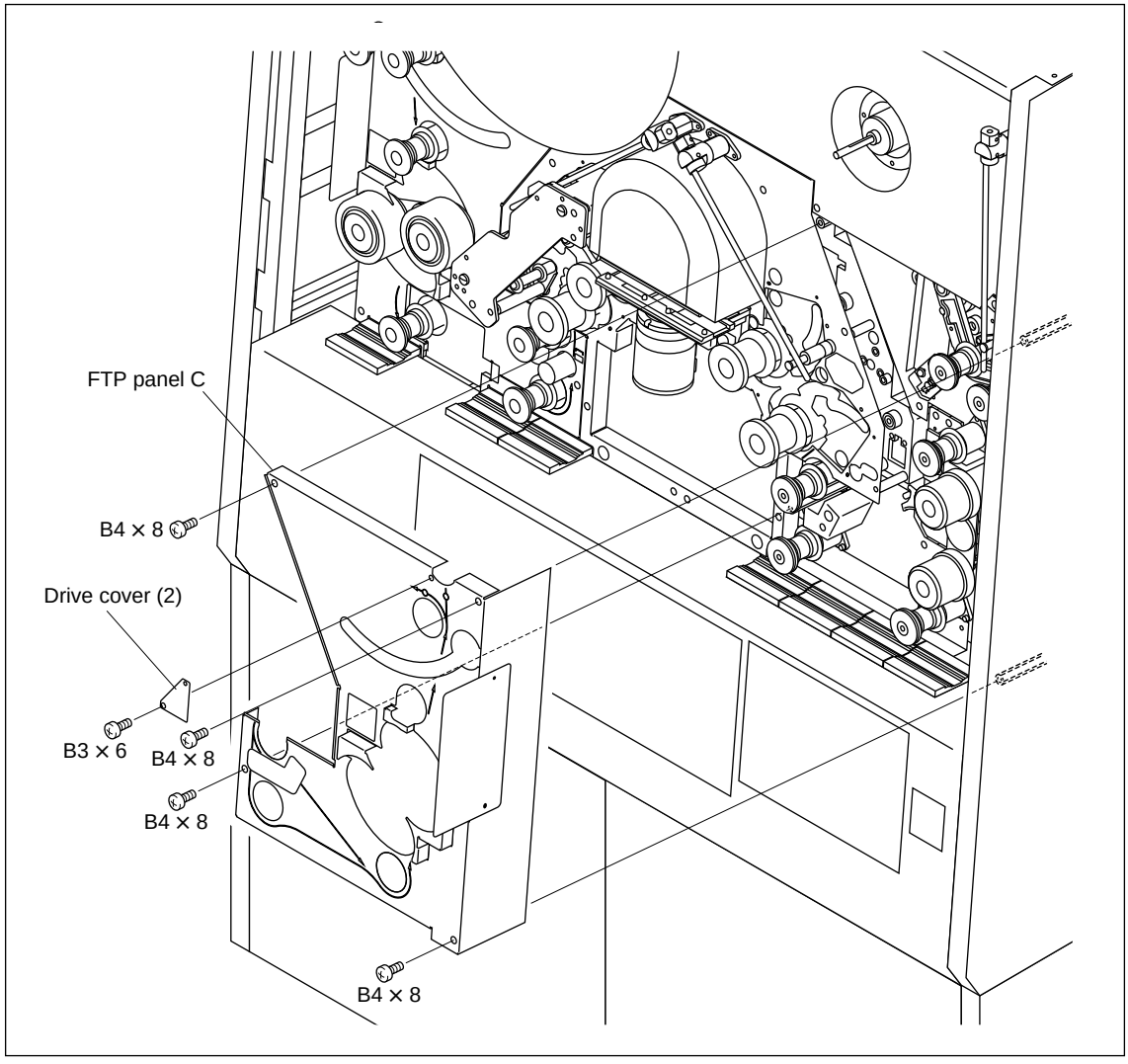
Installation

7. Perform the reverse of steps 1 to 6 of the removal procedure.

Removing/Installing the FTP Panel C

Removal

1. Rotate the knob assembly in the counterclockwise direction and remove it. (T side only) (Refer to ‘’Removing/Installing the FTP Panel A”.)
2. Remove the four screws, and remove the core stopper (B). (T side only) (Refer to ‘’Removing/Installing the FTP Panel A”.)
3. Remove the protector assembly. (T side only) (Refer to ‘’Removing/Installing the FTP Panel A”.)
4. Remove the two PT rollers. (T side only)
5. Remove the drive cover (2).
6. Remove the four fixing screws, and remove the FTP panel C.



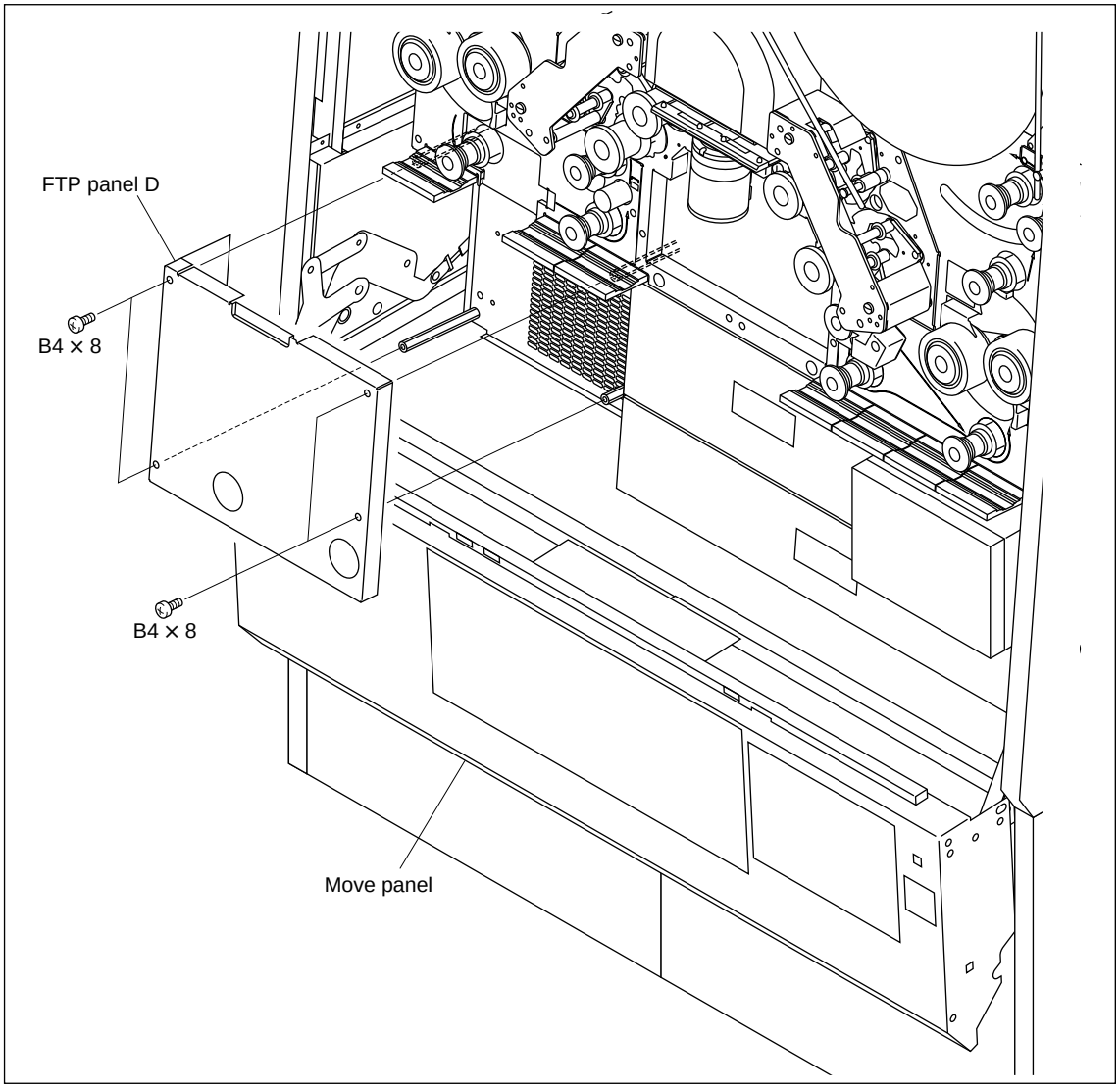
Installation

7. Perform the reverse of steps 1 to 6 of the removal procedure.

Removing/Installing the FTP Panel D

Removal

1. Lower the movable panel.
2. Remove the four screws, and remove the FTP panel D.



Installation

3. Perform the reverse of steps 1 and 2 of the removal procedure.

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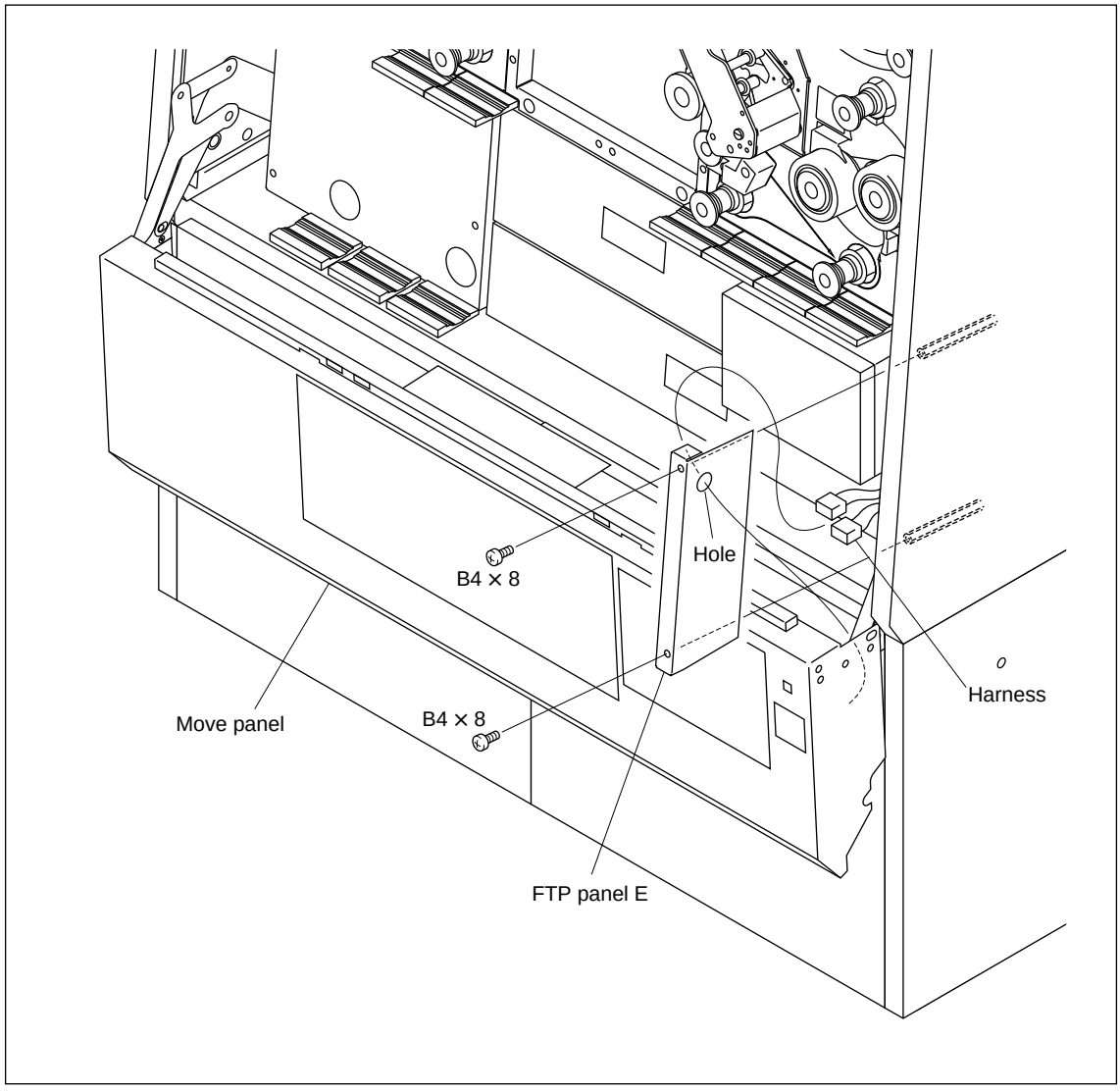
Removing/Installing the FTP Panel E

Removal

1. Lower the movable panel.
2. Disconnect the two harnesses connected to the board of the movable panel.
3. Disconnect the two harnesses above fixed to the frame and FTP panel E from the clamper.
4. Remove the two screws, and remove the FTP panel E.
   At this time, pass the harnesses through the hole in the FTP panel E and remove it.



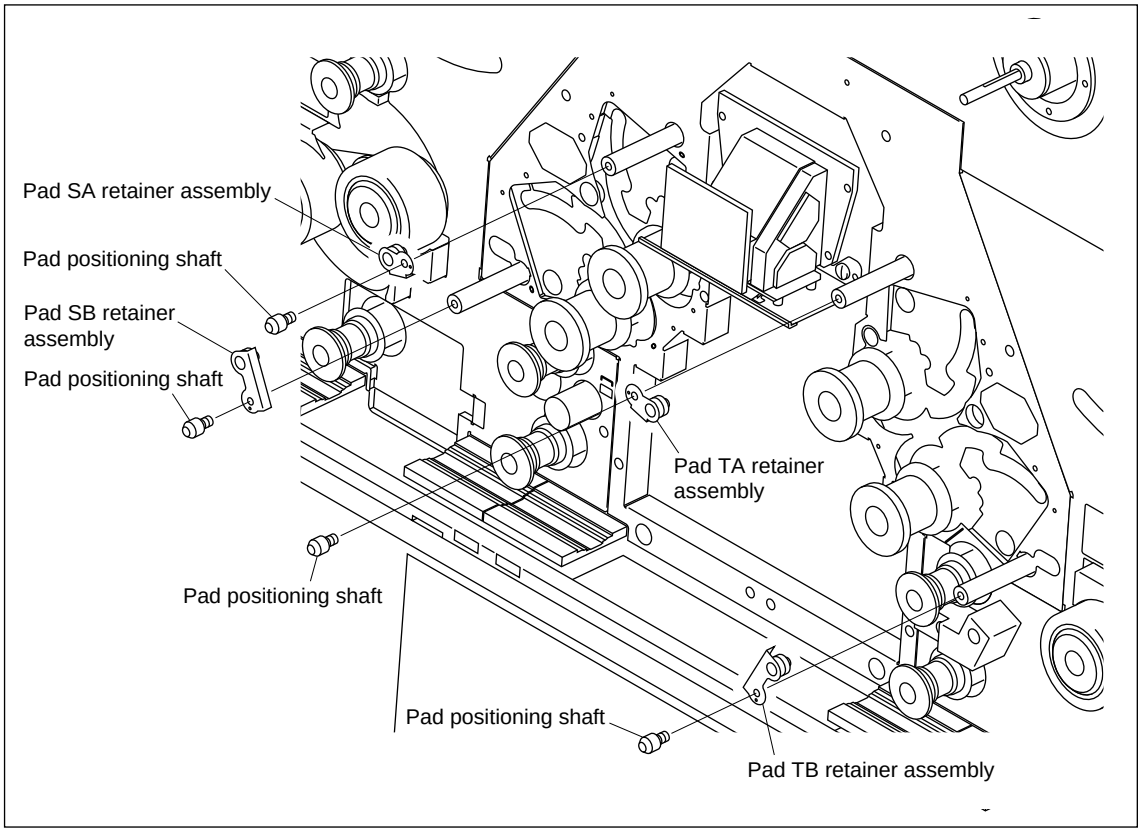
Installation

5. Perform the reverse of steps 1 to 4 of the removal procedure.

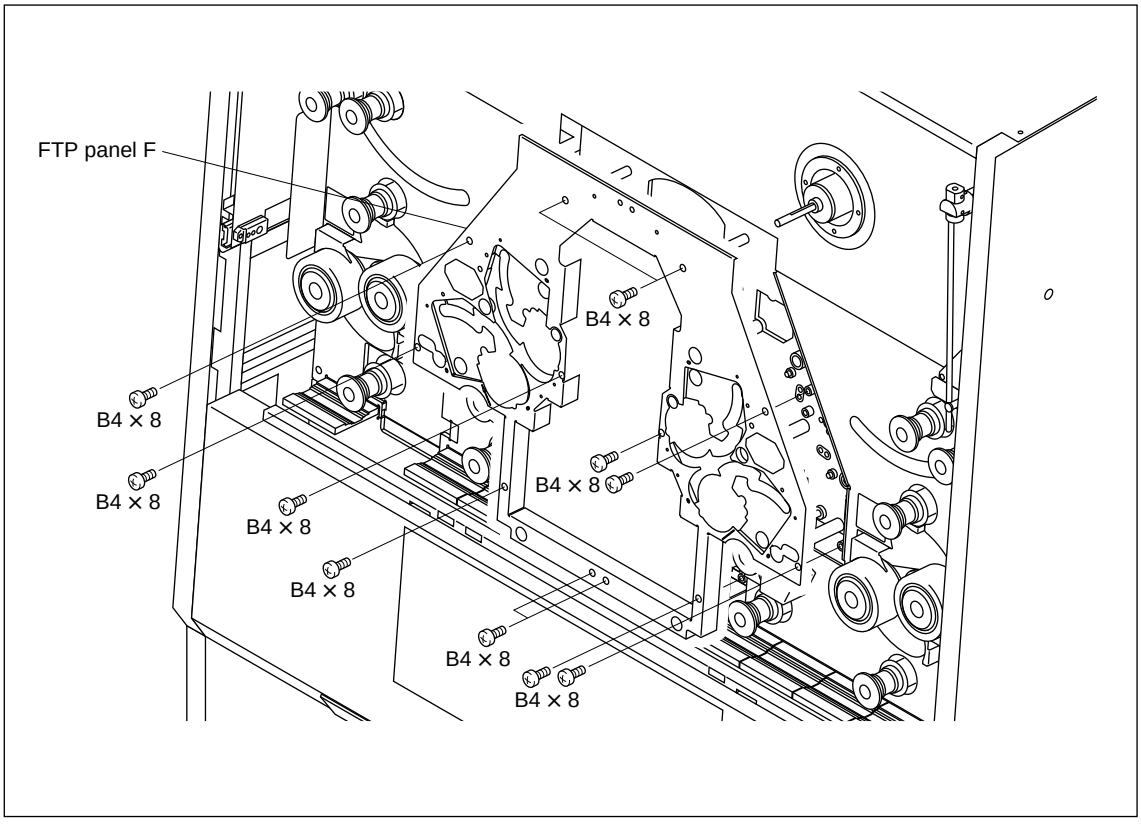
Removing/Installing the FTP Panel F

Removal

1. Rotate the knob assembly in the counterclockwise direction and remove it. (Both S, T) (Refer to ‘’Removing/Installing the FTP Panel A”.)
2. Remove the four screws, and remove the core stopper (B). (Both S, T) (Refer to ‘’Removing/Installing the FTP Panel A”.)
3. Remove the protector assembly. (Both S, T) (Refer to ‘’Removing/Installing the FTP Panel A”.)
4. Remove the two screws, and remove the film guard assembly. (Both S, T)
5. Remove the guard stopper assembly. (Both S, T)
6. Remove the OPS cover.
7. Remove the gate base assembly.
8. Remove the PAD assembly. (Both S,T)
9. Remove the four PAD positioning shafts, and remove the PAD receiving table SA assembly, PAD receiving table SB assembly, PAD receiving table TA assembly, and PAD receiving table TB assembly.



10. Remove the 12 screws, and remove the FTP panel F.



Installation

11. Perform the reverse of steps 1 to 10 of the removal procedure.

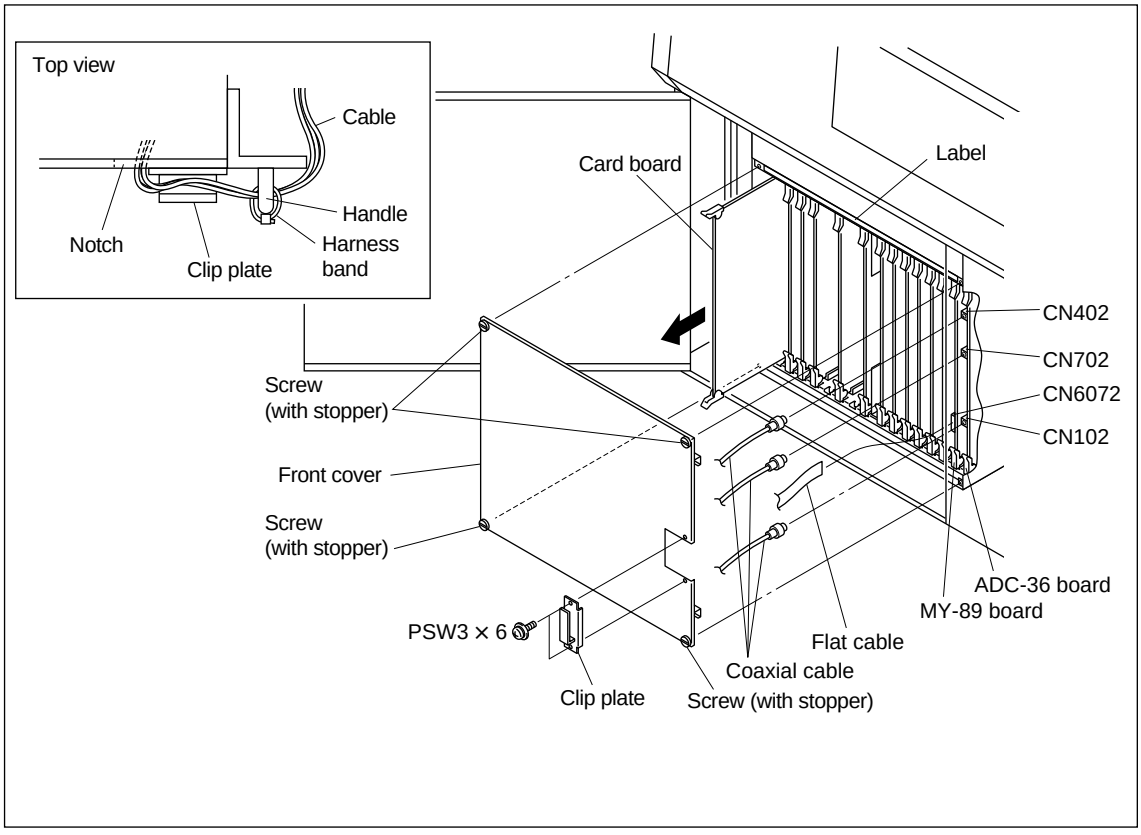
2-8. Removing/Installing the Board

2-8-1. Processor Board (FVS-P1000) and BKFV-100/200

Front side

Removal

1. Open the door at the bottom of the unit.
2. Loosen the four screws (with stopper), and remove the front cover.
3. Disconnect the flat cable from the connector CN6027 of the MY-89 board.
4. Disconnect the three coaxial cables from the connectors CN402, CN702, and CN102 of the ADC-36 board.
5. Pull out the processor board from the guide rail.



Installation

6. Perform the reverse of steps 1 to 5 of the removal procedure.

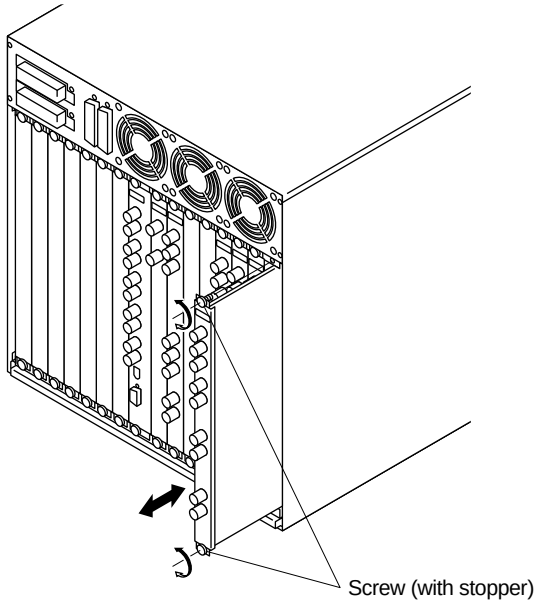
Note

- When inserting the processor board, confirm the processor board name on the label.
- Insert the processor board completely until the connector is connected.
- Pull out the flat cable and the coaxial cables connected with the processor boards through the notch of the front panel, then fix them with the clip plate and two screws (PSW3 x 6).

Rear view

Removal

1. Loosen the two screws (with stopper) at the top and bottom of the board panel alternately.
2. Pull out the processor board from the guide rail.



Installation

3. Insert the processor board along the guide rail.
4. Tighten the upper and lower knobs one after the other several times, then insert the connector completely until the connector is connected.

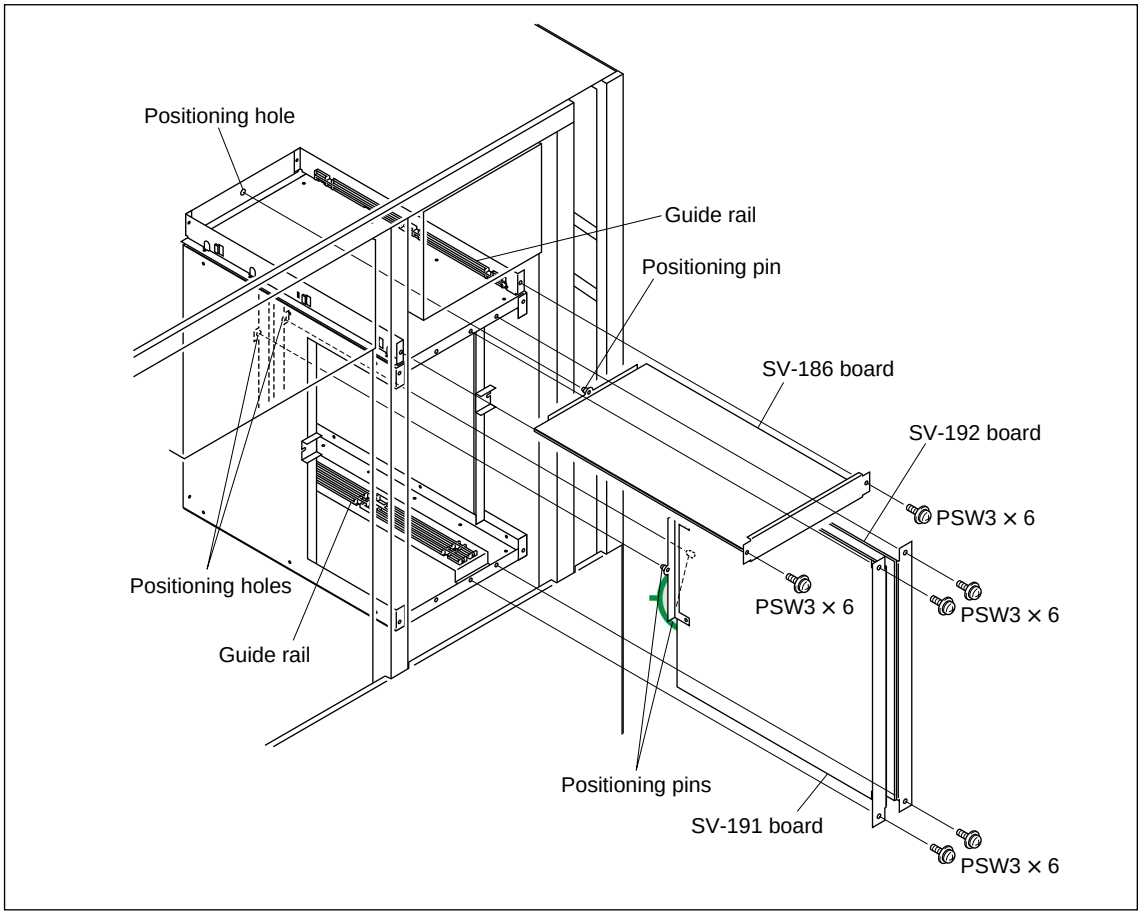
Note

Be sure to tighten the two screws one after the other.
If one screw is tightened completely first, there is a possibility of damaging the connector or screw.

2-8-2. SV Board

Removal

1. Remove the rear panel (top). (Refer to section 2-7-2.)
2. Remove the two screws fixing the SV board.
3. Pull out the SV board from the guide rail.
4. Remove the harness connected to the SV board.

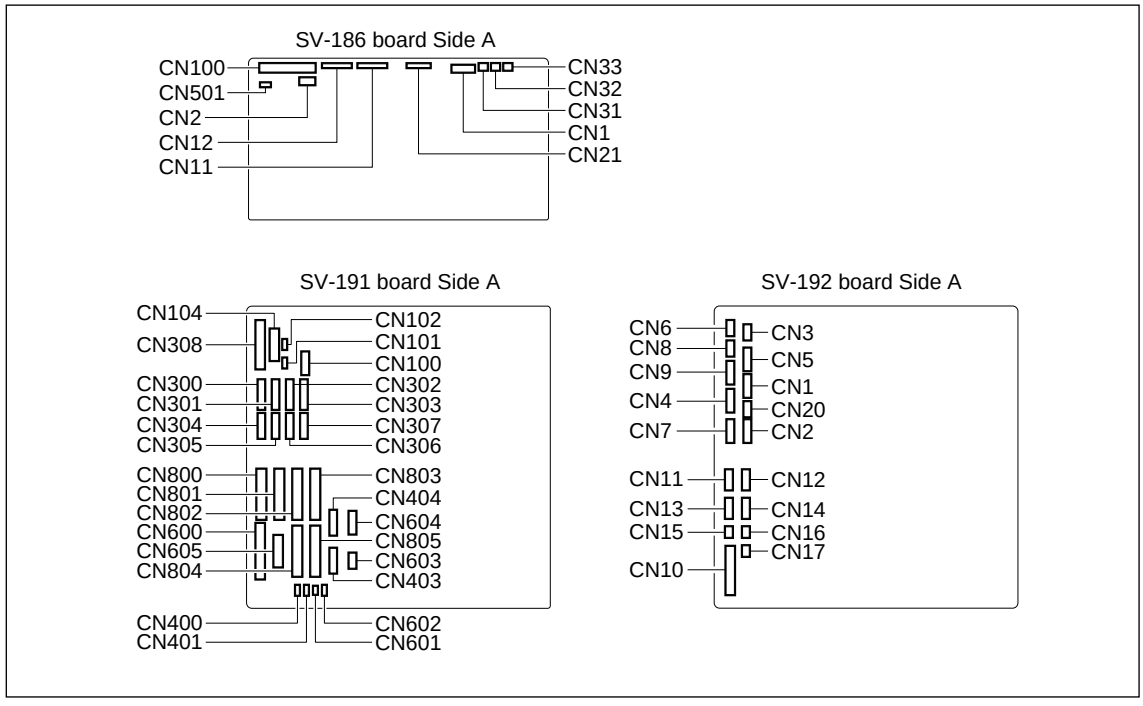


Installation

5. Perform the reverse of steps 1 to 4 of the removal procedure.

Note

- Connect the harnesses to the corresponding connectors (connector No.). (Refer to the following diagram.)
- Push in each board until the positioning pin goes inside the positioning hole.



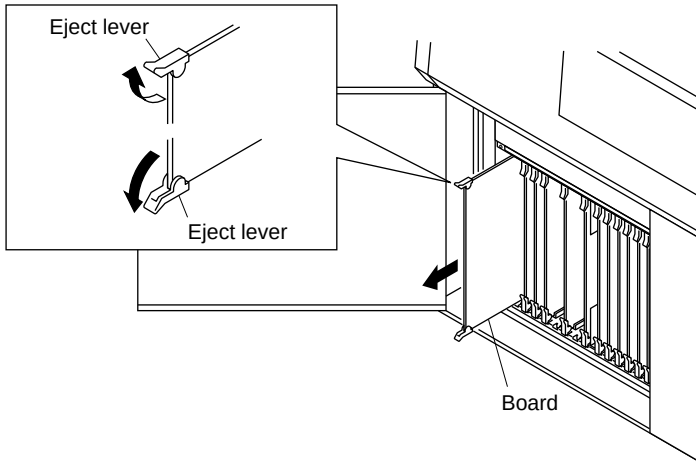
2-9. Using the Extension Board

The extension board is provided with the FVS-P1000 for checking and adjusting the processor board.

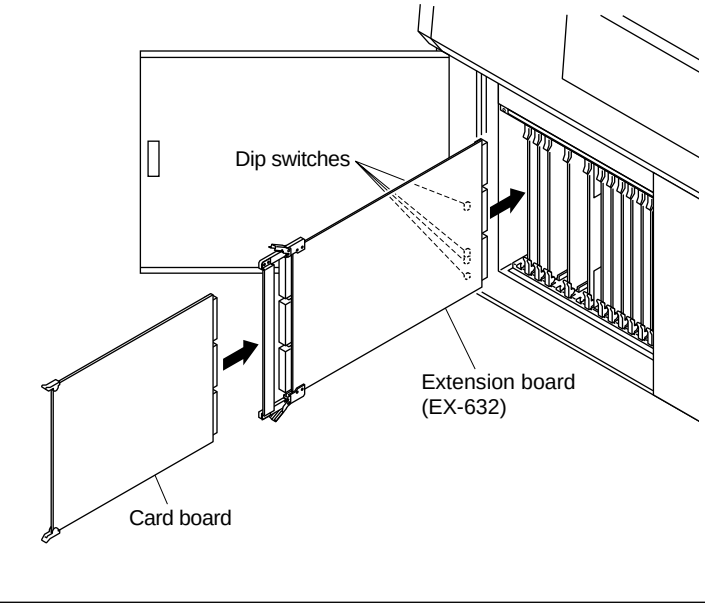
- Extension board (EX-632): J- For extending the board in front of the processor
- Extension board (EX-670): J- For extending the board at the rear of the processor

Extending the Front Side Board

1. Open the door at the bottom of the unit.
2. Loosen the four screws, and remove the front cover.
3. Open the eject levers at both ends of the board removed in the arrow direction.
4. Holding the eject levers, pull out the board.

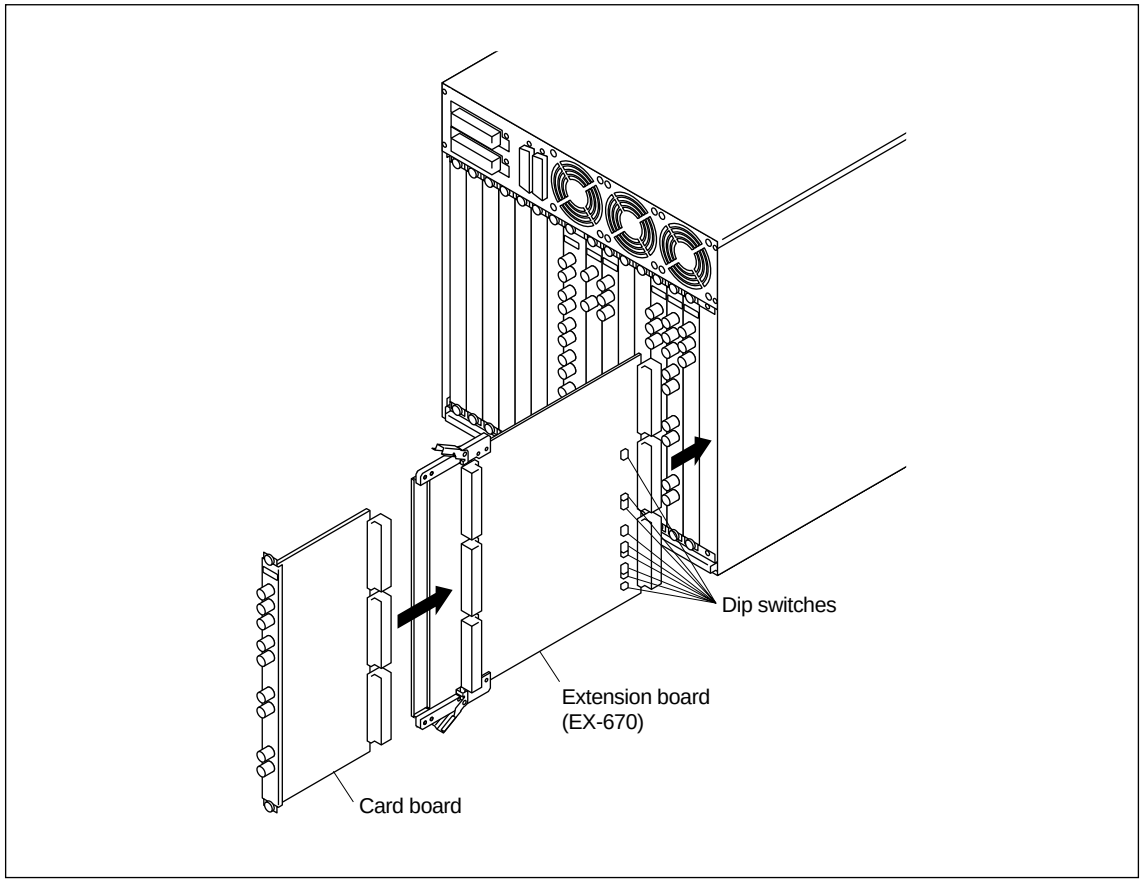


5. Set the dip switches of the extension board according to the board extended.
6. Push in the extension board (EX-632) according to the guide rail.
7. Insert the board removed into the extension board.



Extending the Rear Side Board

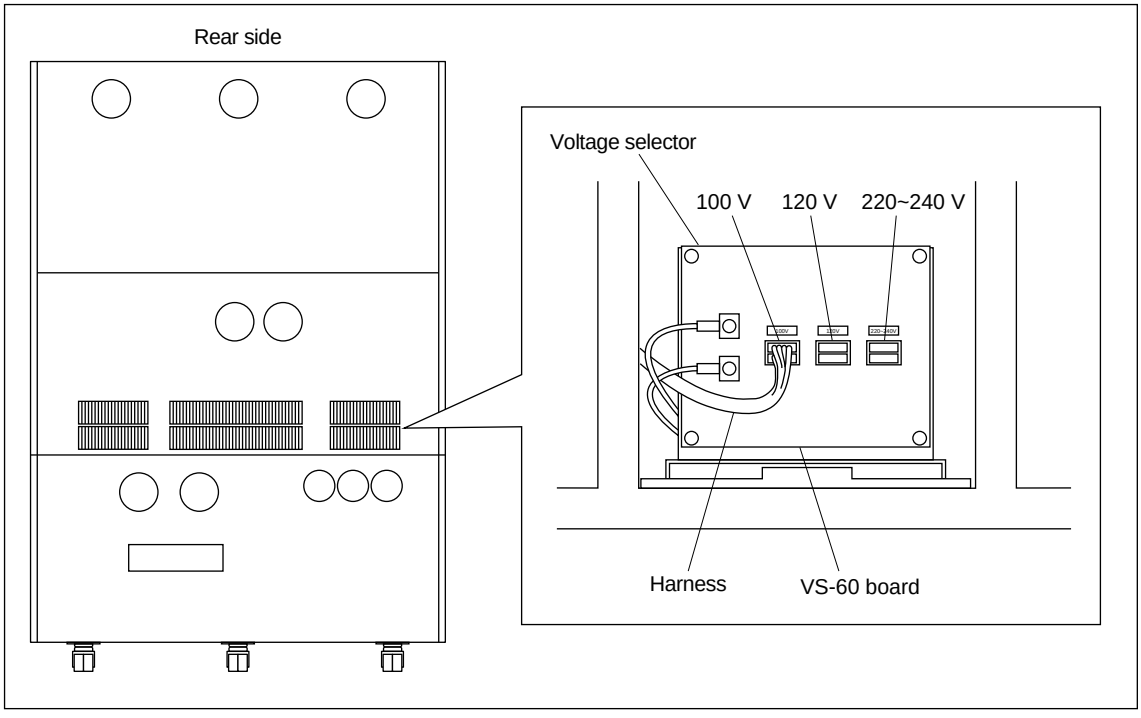
1. Loosen the screws at the top and bottom of the board panel alternately.
2. Holding the screws, pull out the board. (Refer to section 2-8.)
3. Set the dip switches of the extension board according to the board extended.
4. Push in the extension board (EX-670) according to the guide rail.
5. Insert the board removed into the extension board.



2-10. Checking and Setting the Power Supply Voltage

2-10-1. Confirmation of Power Supply Voltage

1. Check the VS-60 board from the slit of the rear panel.
2. Confirm that the harness is connected with the connector of the appropriate voltage on the VS-60 board.



2-10-2. Setting the Power Supply Voltage

Display	Voltage Range	Frequency
100 V	100 V ±10 %	50 to 60 Hz
120 V	100 V ±10 %	50 to 60 Hz
220 to 240 V	220 V to 240 V ±10 %	50 to 60 Hz

Change the connectors corresponding to the above voltage supplied to the unit according to the following procedure.

1. Turn off the AC power supplied to the unit.
2. While removing the lock of the connector, remove the harness and insert it into the connector of the desired voltage until it locks.

Notes

- Do not touch the VS-60 board while the power is on as it operates on high voltages.
- When changing the connector, be sure to turn off the power supplied to the unit.
- Be sure to check that the connector is inserted deeply. (Make sure it locks with a click.)
- Before supplying power to the unit again, check the voltage display of the connector connected to the VS board again.
  Make sure that the voltage is appropriate, otherwise the internal parts may damage.

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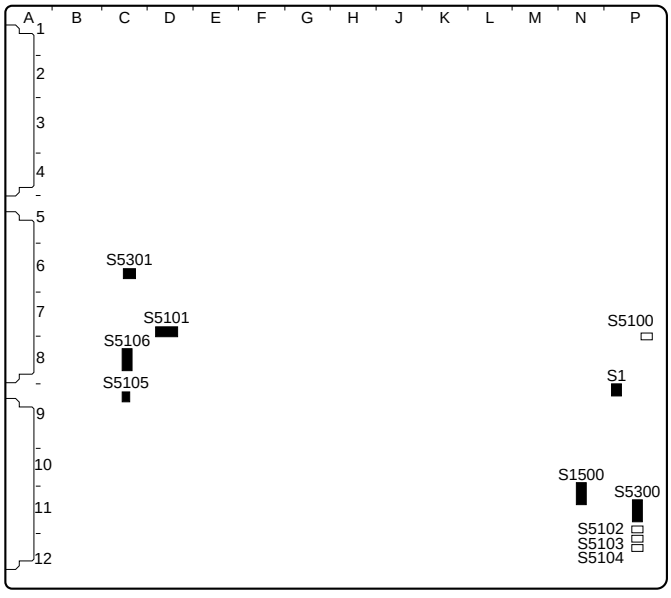
2-11. Function of Switches/LEDs on the Board

2-11-1. ADC-36 Board



ADC-36 BOARD (A SIDE)

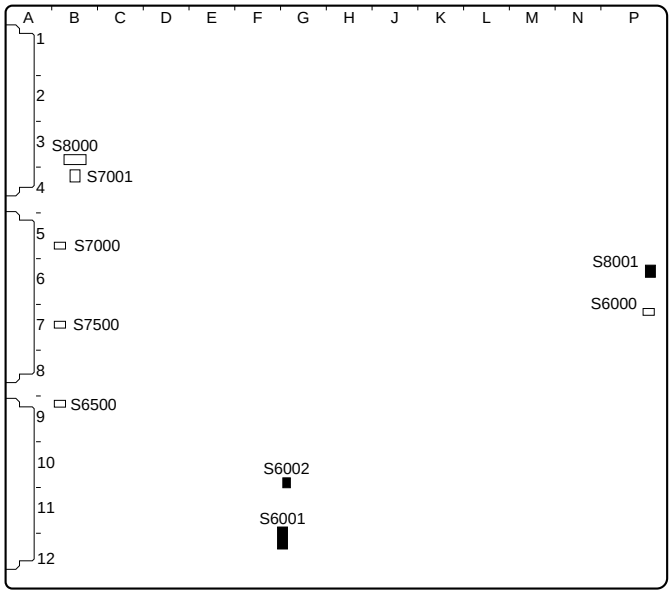
Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S5300	(P-11)	TSG	Test signal generator mode setting S5300-1 : Factory use only S5300-2 : Factory use only S5300-3 : Factory use only S5300-4 : Factory use only S5300-5, 6, 7 : TSG signal select bit7 bit6 bit5 signal OFF OFF OFF H ramp (1) ON OFF OFF Color bars OFF ON OFF 100 % 9 MHz sine wave ON ON OFF V ramp OFF OFF ON 25 % 9 MHz sine wave ON OFF ON H ramp (2) S5300-8 : TSG ON/OFF select OFF: TSG OFF ON: TSG ON	
S1500	(N-11)		Factory use only	All bits OFF
S1	(P-8)		Factory use only	bit 2: ON, others: OFF
S5101	(D-7)		Factory use only	All bits OFF
S5106	(C-8)		Factory use only	All bits OFF
S5105	(C-9)		Factory use only	All bits OFF
S5301	(C-6)		Clock phase	bit 4: ON, others: OFF

2-11-2. CC-78 Board



CC-78 BOARD (A SIDE)

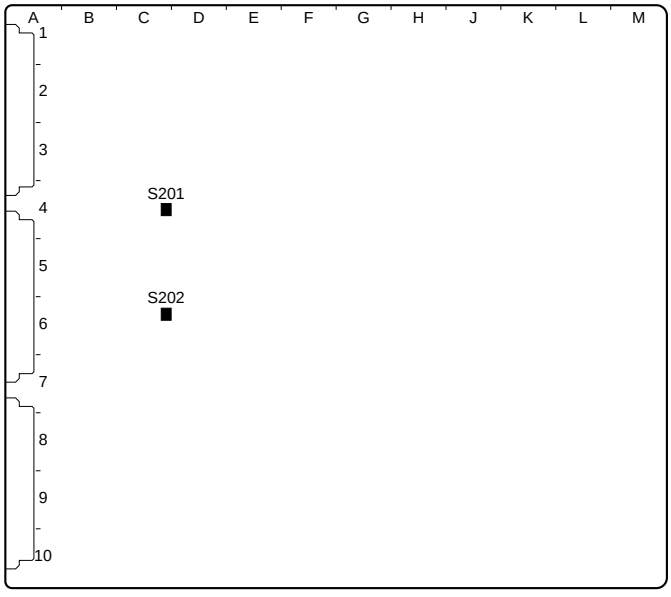
Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S7001	(B-4)		Clock phase	bit 1: ON, others: OFF
S8000	(B-3)		S8000-1 to 7 : Factory use only S8000-8 : Test signal ON/OFF OFF: TSG OFF ON: TSG ON (H ramp only)	
S8001	(P-6)		Factory use only	
S6002	(G-10)		Factory use only	All bits OFF
S6001	(G-11)		Factory use only	bits 7, 8: ON bits 1 to 6: OFF

2-11-3. CN-1600 Board



CN-1600 BOARD (A SIDE)

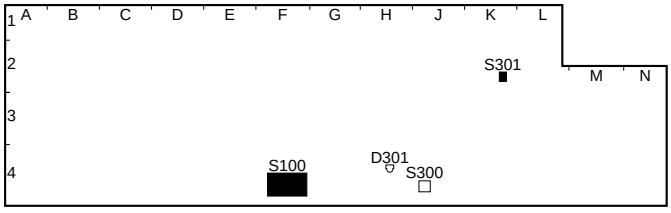
Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S201	(C-4)		S201-1 : Factory use only	OFF
			S201-2 : Factory use only	OFF
			S201-3 : Factory use only	ON
			S201-4 : Factory use only	OFF
S202	(C-6)		S202-1 : Factory use only	OFF
			S202-2 : Factory use only	OFF
			S202-3 : Factory use only	ON
			S202-4 : Factory use only	OFF

2-11-4. CP-322 Board



CP-322 BOARD (A SIDE)

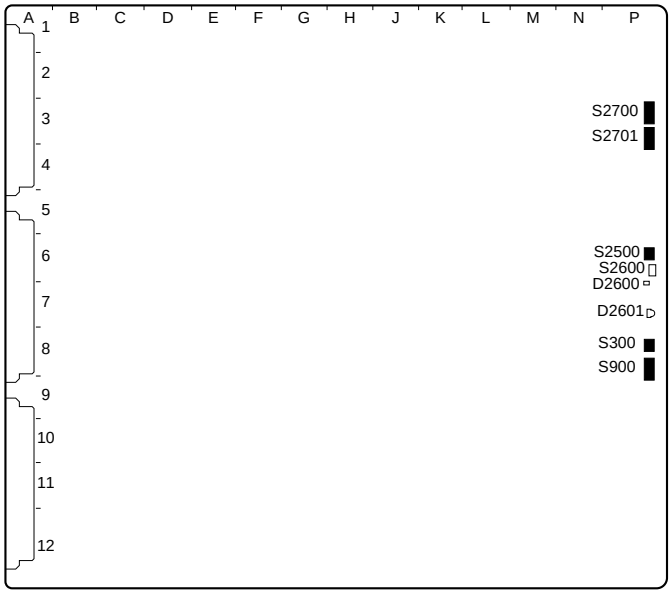
Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S100	(F-4)		S100-1 to 8 : Factory use only	All bits OFF (8bits)
S301	(K-2)		S301-1 : Factory use only S301-2 : Factory use only	OFF OFF

2-11-5. DCP-20 Board



DCP-20 BOARD (A SIDE)

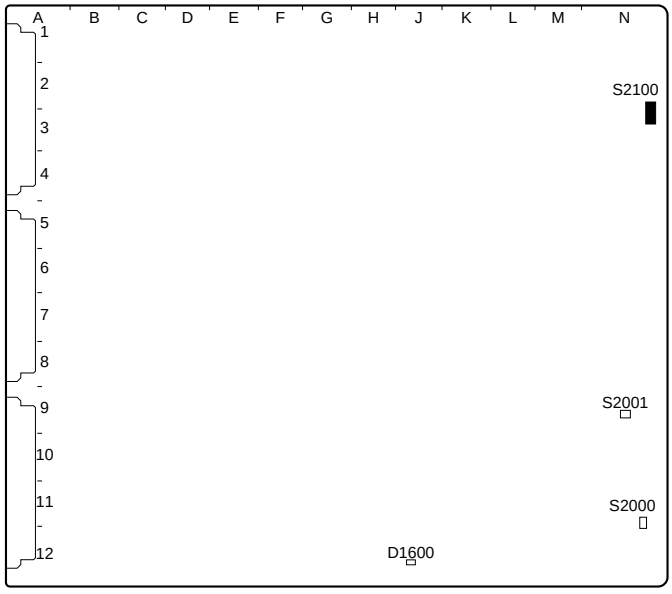
Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S900	(P-8)		Factory use only	All bits OFF
S300	(P-8)		Factory use only	bit 4: OFF, others: ON
S2500	(P-6)		Factory use only	All bits OFF
S2701	(P-3)		Factory use only	All bits OFF
S2700	(P-3)		Factory use only	All bits OFF

2-11-6. DHP-10 Board



DHP-10 BOARD (A SIDE)

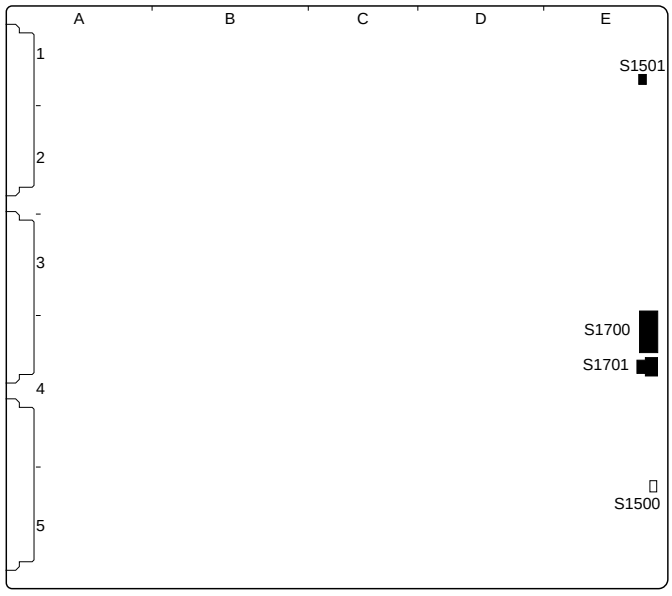
Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S2100	(N-3)		S2100-1 : Factory use only S2100-2 : Internel test SG (Enabled on S2100-8 is ON) OFF: TSG OFF ON: TSG ON S2100-3 : Factory use only S2100-4 : Factory use only S2100-5 : TSG signal select (Enabled on S2100-2 is ON) OFF: H ramp ON: 7F ↔ 80 toggle signal S2100-6 : Factory use only S2100-7 : Factory use only S2100-8 : HIB Enable/Disable OFF: HIB_Enable ON: HIB_Disable	
S2001	(N-9)		S2001-1 : Boot from FLASH Memory/ROM OFF: FLASH Memory ON: ROM S2001-2 : Factory use only	

2-11-7. DSP-81 Board



DSP-81 BOARD (A SIDE)

Switches

Note

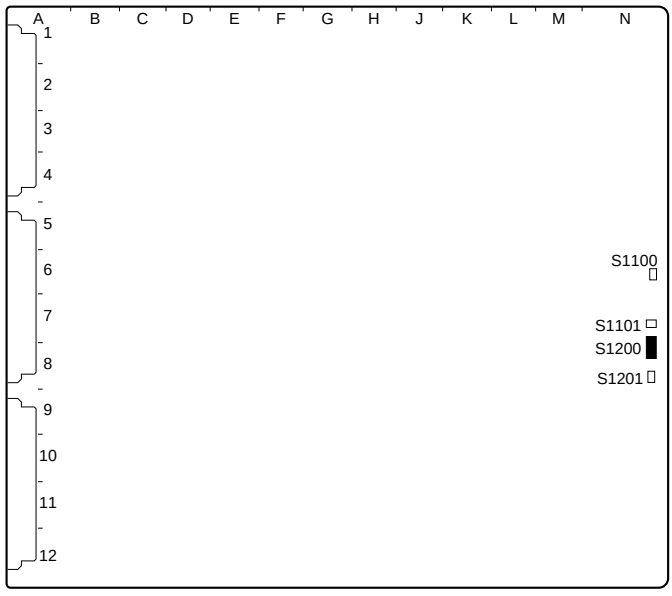
Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S1700	(E-4)		HIB Enable/Disable select S1700-1 : HIB Enable/Disable OFF: Enable *1 ON: Disable *2 S1700-2 : Scan structure OFF: Progressive (8:4:4 V) ON: Interlace S1700-3 : Line Standard OFF: 525 ON: 625 S1700-4 : Factory use only S1700-5 : Factory use only S1700-6 : Factory use only S1700-7 : TSG enable OFF: Main(video from DCP) ON: TSG S1700-8 : TSG enable (This bit activated on S1700-7 is ON) OFF: Fixed(flat field) signal ON: H or V signal	

Ref.No.	Address	Name	Function	Factory setting
S1701	(E-4)	TSG signal selector	TSG signal select (When S1700-8 is ON, V or H signals) 0 : Vertical 100% color bars 1 : V sweep for Progressive (Y/Cb/Cr) 2 : V sweep for Interlace (Y/Cb/Cr) 3 : V ramp (Y/Cb/Cr) 4 : Vertical 75% color bars 5 : V sweep for Progressive (G/B/R : monochrome) 6 : V sweep for Interlace (G/B/R : monochrome) 7 : V ramp (G/B/R : monochrome) 8 : Horizontal 100% color bars 9 : H sweep 8:8:8/12M (Y/Cb/Cr) A : H sweep 4:4:4/ 6M (Y/Cb/Cr) B : H ramp & 5 steps (Y/Cb/Cr) C : Horizontal 75% color bars D : H sweep 8:8:8/12M (G/B/R : monochrome) E : H sweep 4:4:4/ 6M (G/B/R : monochrome) F : H ramp & 5 steps (G/B/R : monochrome) (When S1700-8 is OFF, Fixed (flat field) signals) 0, 8 : Black 1, 9 : Pathlogical (SDI check field for Cable Equalizer) 2, A : Pathlogical (SDI check field for PLL, D1 style) 3, B : Pathlogical (SDI check field for PLL, Digi-Beta style) 4, C : 100% White 5, D : 100% Green 6, E : 100% Blue 7, F : 100% Red	8
S1501	(E-1)		Factory use only	All bits ON

∗1: When this bit is OFF, All board status refer to system_bus (HIB) and bit2 to 8 are disabled.
∗2: When this bit is ON, Wipe & Mix goes to OFF and Image Enhancer is bypassed.
Other board status conform to bit2 to bit8 and parameters from system_bus (HIB) is ignored.
Thus, control from local control panel or REMOTE is NOT available.
Then, bit2 and bit3 must be set to present system.

2-11-8. EN-137 Board



EN-137 BOARD (A SIDE)

Switches

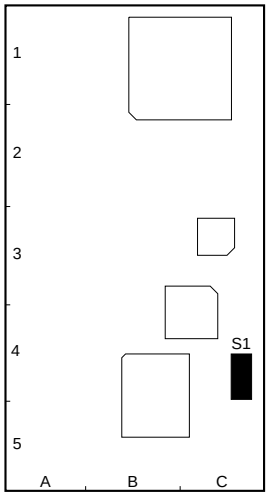
Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S1200	(N-8)		S1200-1, 2, 3 : Factory use only S1200-4, 5 : Factory use only S1200-6, 7 : Factory use only S1200-8 : HIB Enable/Disable OFF: Enable ※1 ON: Disable ※2	

※1: When this bit is OFF, All board status refer to system bus (HIB).
※2: When this bit is ON, All board status conform to internal setting and parameters from system bus (HIB) is ignored.

2-11-9. IF-693 Board



IF-693 BOARD (A SIDE)

Switches

Ref.No.	Address	Name	Function	Factory setting
S1	(C-4)		Factory use only	All bits OFF (8bits)

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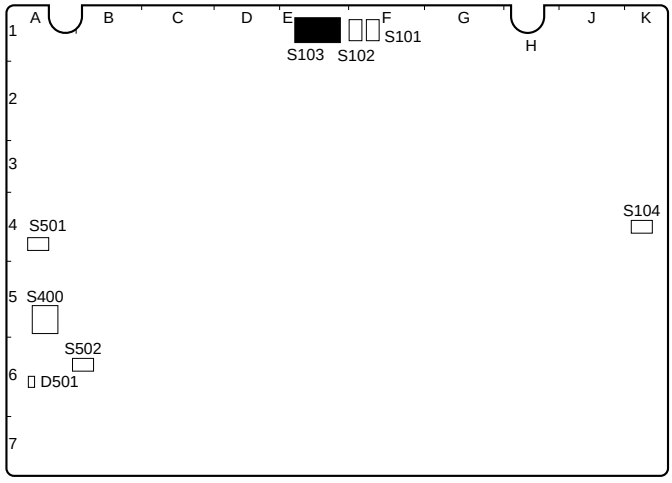
2-11-10. LC-35 Board



LC-35 BOARD (A SIDE)

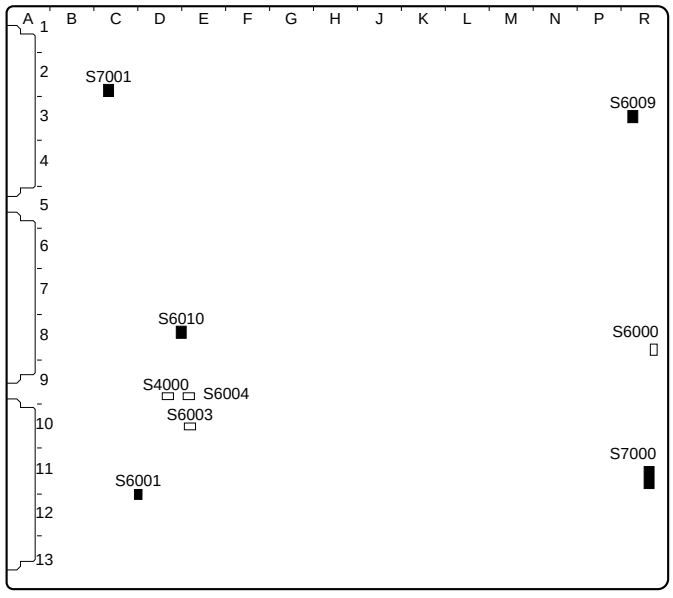
Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S103	(E-1)	Mode select	Sets the operating mode S103-1 : Baudrate of LC-35 monitor OFF: 19200 bps, 7 bit,even parity ON: 2400 bps, 7 bit, even parity S103-2 : Factory use only	

2-11-11. MY-89 Board



MY-89 BOARD (A SIDE)

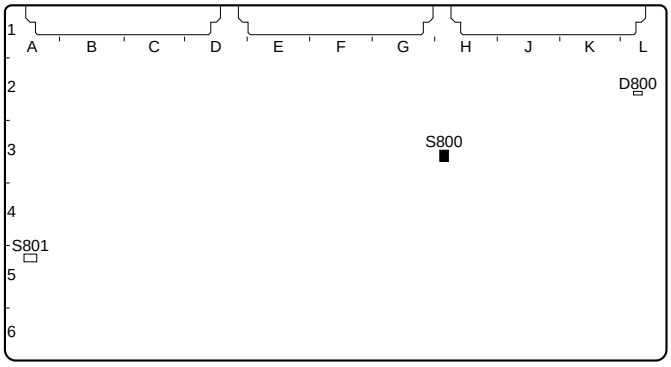
Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S7000	(R-11)		S7000-1 to 7 : Factory use only S7000-8 : Test signal ON/OFF OFF: TSG OFF ON: TSG ON (H ramp only)	
S6009	(R-3)		Factory use only	
S7001	(C-2)		Clock phase	bit 3: ON, others: OFF
S6001	(C-11)		Factory use only	All bits OFF
S6010	(D-8)		Factory use only	All bits OFF

2-11-12. RX-45 Board

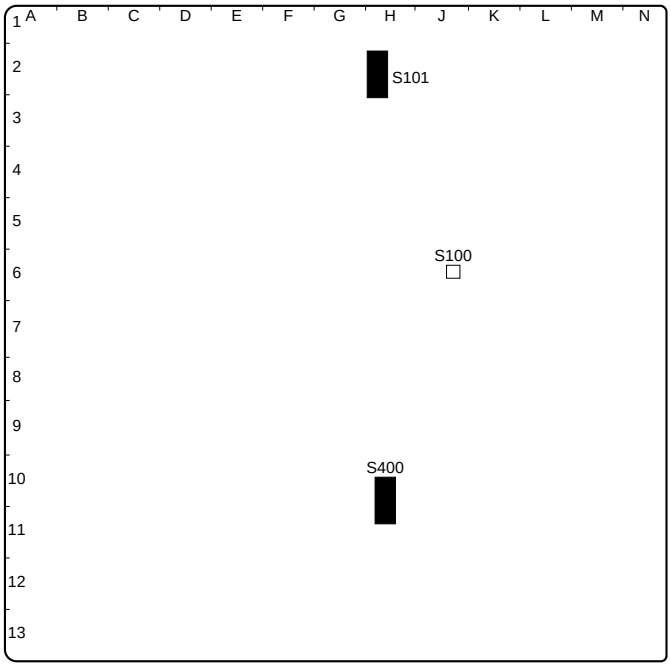


RX-45 BOARD (A SIDE)

Switches

Ref.No.	Address	Name	Function	Factory setting
S800	(H-3)	SDI-VCO adjustment	SDI-VCO frequency adjustment S800-1 : Free run frequency adjustment ON: Free run frequency adjustment at 625/48 OFF: Free run frequency adjustment at 525/59.94 & 625/50 S800-2 : Not use	

2-11-13. SV-191 Board



SV-191 BOARD (A SIDE)

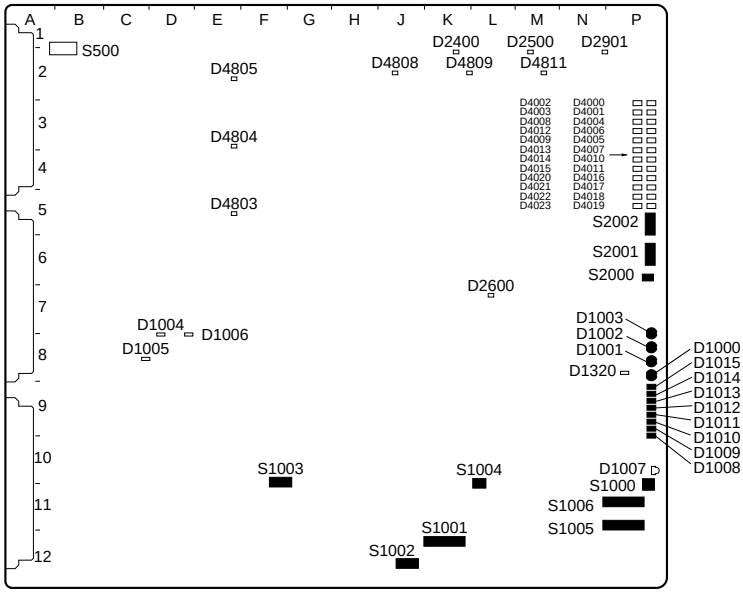
Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S400	(H-10)	SV CPU (reel,...etc)	Sets the operating mode of servo CPU S400-1 : Factory use only S400-2 : Factory use only S400-3 : Factory use only S400-4 : Factory use only S400-5 : Factory use only S400-6 : Factory use only S400-7 : Boot from ROM/FLASH Memory OFF: Boot from ROM ON: Boot from FLASH Memory (Load FLASH Memory Data to RAM, and CPU run on RAM) S400-8 : Interrupt OFF: Disable ON: Enable	
S101	(H-2)	MC CPU (camera motion,...etc)	Sets the operating mode of MC CPU S101-1 : Factory use only S101-2 : Factory use only S101-3 : Factory use only S101-4 : Factory use only S101-5 : Factory use only S101-6 : Factory use only S101-7 : Boot from ROM/FLASH Memory OFF: Boot from ROM ON: Boot from FLASH Memory (Load FLASH Memory Data to RAM, and CPU run on RAM) S101-8 : Interrupt OFF: Disable ON: Enable	

2-11-14. SY-256 Board



SY-256 BOARD (A SIDE)

Switches

Note

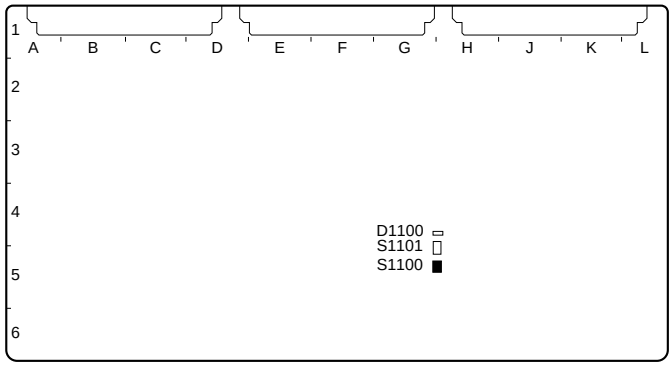
Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S1000	(P-10)	SY reset switch	Initialize the SY board.	—
S2000	(P-6)	TG block reset switch	Initialize the TG block on the SY board.	—
S2001	(P-6)		S2001-1 to 8 : Factory use only	All bits OFF
S2002	(P-5)		S2002-1 to 8 : Factory use only	All bits OFF
S1001	(K-12)		Factory use only	bit 6: ON, Others: OFF
S1002	(J-12)		Factory use only	All bits OFF
S1003	(F-10)		Factory use only	bit 1, 4 : OFF bit 2, 3 : ON
S1004	(L-10)		Factory use only	bit 1: OFF, bit 2: ON
S1005	(P-11)		Factory use only	bit 2: OFF, Others: ON
S1006	(P-11)		Factory use only	bit 1: OFF, Others: ON

LEDs

Ref.No.	Address	Color	Name	Function	Normal condition
D1003	(P-7)	Green		Light on reset	off
D1002	(P-8)	Green		Flash by Reference Frame synchronously.	Lights up
D1001	(P-8)	Green		Flash by Film Frame synchronously.	Lights up
D1000	(P-8)	Green			Normaly flash (interval: 0.5 sec)
D1015	(P-9)	Red			Normaly flash
D1014	(P-9)	Red		Factory use only	off
D1013	(P-9)	Red		Fast-9 TX indicator	OFF: without remote controller Flash: with remote controller
D1012	(P-9)	Red		Fast-9 RX indicator	OFF: without remote controller Flash: with remote controller
D1011	(P-9)	Red		Factory use only	off
D1010	(P-9)	Red		Factory use only	off
D1009	(P-9)	Red		SV, LC I/F error indicator	off
D1008	(P-9)	Red		HIB bus error indicator	off
D4023	(P-5)	Red	LOCK	PLL lock status	
D4019	(P-5)	Red	RSV	Light on factory mode (see bit1 of S2001 OFF)	
D4022	(P-4)	Red	EXIST	Reference signal is exist on selected REF input.	
D4018	(P-4)	Red	FRQ	Light on 1000/1001	
D4021 D4020 D4015 D4014	(P-4) (P-4) (P-4) (P-4)	Red Red Red Red	EXT REF	Indicate selected frame rate of External reference. “HD"LED will light on HD	
D4017 D4016 D4011 D4010	(P-4) (P-4) (P-4) (P-4)	Red Red Red Red	FILM	Indicate selected FTP frame rate. "VAL"LED will light on valiable play.	
D4007 D4005 D4006	(P-3) (P-3) (P-3)	Red Red Red	DHP1	Indicate Video output frame rate respectively.	
D4013 D4009 D4012	(P-3) (P-3) (P-3)	Red Red Red	DHP2	Indicate Video output frame rate respectively.	
D4004 D4001 D4000	(P-3) (P-3) (P-3)	Red Red Red	DSP1	Indicate Video output frame rate respectively.	
D4008 D4003 D4002	(P-3) (P-3) (P-3)	Red Red Red	DSP2	Indicate Video output frame rate respectively.	

2-11-15. TX-67 Board

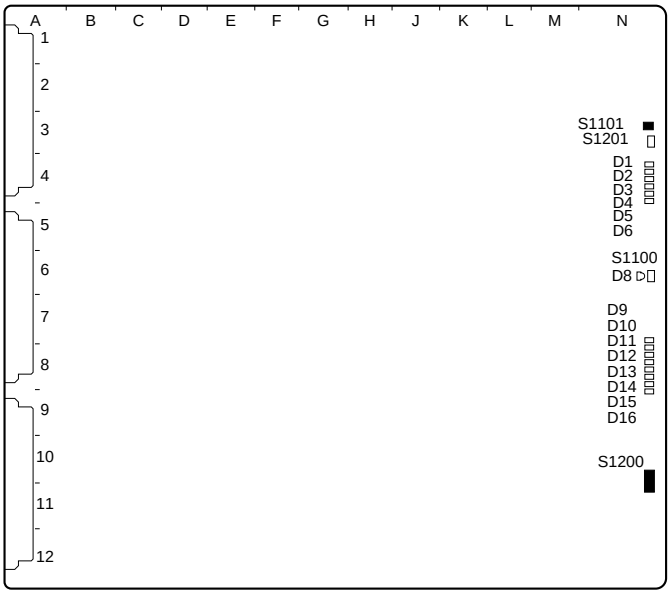


TX-67 BOARD (A SIDE)

Switches

Ref.No.	Address	Name	Function	Factory setting
S1100	(H-5)	SDI-VCO adjustment	SDI-VCO frequency adjustment	
			S1100-1 : Free run frequency adjustment	OFF
			ON: Free run frequency adjustment at 625/48	
			OFF: Free run frequency adjustment at 525/59.94 & 625/50	
			S1100-2 : Not use	OFF

2-11-16. VE-42 Board



VE-42 BOARD (A SIDE)

Switches

Note

Do not change the setting of the switch described as “Factory use only”

Ref.No.	Address	Name	Function	Factory setting
S1101	(N-3)		Factory use only	All bits OFF
S1200	(N-10)		S1200-1 to 7 : Factory use only S1200-8 : HIB Enable/Disable select OFF: Enable ∗1 ON: Disable ∗2	

∗1: When this bit is OFF, All board status refer to system bus (HIB).
∗2: When this bit is ON, All board status conform to internal setting and parameters from system bus (HIB) is ignored.

Section3
Periodic Check and Maintenance

Perform the periodic checks and maintenance in order to ensure correct function and performance and also to extend the life of the film.

3-1. Periodic Inspection List

The time shown below is not the warranted time of the part. Use the following time as reference to plan the maintenance and inspection. The time for the part replacement depends on circumstances and conditions where the system is operated.

C : Inspection and cleaning
R : Replacement

Inspection item	Inspection time (h) (Lamp lighting time)								Replaced part	Amount
	1000	2000	3000	4000	5000	6000	7000	8000	Part number	
Lamp	R	R	R	R	R	R	R	R	1-517-872-11	1
Gate base (35) assembly (Film position fixing support) (Film support assembly)		C		C		C		C	A-8321-665- (3-616-888-) (A-8321-666-)	1 (4) (1)
Retainer (35) assembly		C		C		C		C	A-8321-664-	1
I Sprocket 35/16	R:7500 h		R:15000 h						3-617-172-01	2
C Sprocket 35/16	R:7500 h		R:15000 h						3-617-173-01	2
Filter Assembly	R:7500 h		R:15000 h						A-8321-649-	1
IR/UV Cut Filter	R:7500 h		R:15000 h						1-758-295-11	1
LED (Analog audio)	R:15000 h									
Audio drum (Upper)	R:15000 h									
Audio drum (Lower)	R:15000 h									

- As for the element and mist separator (AFM2000) of the filter regulator (AW2001), it is recommended to replace them every two years or when the pressure decreases to 0.1 MPa (1 Kgf•cm).

3-2. Cleaning the Running System

Check to see whether dust etc. adheres to the guide, gate , sprocket and retainer etc. or not. If it does perform the cleaning with care not to damage the film.

Tools

Cleaning cloth : 3-184-527-01
Cleaning fluid : 9-919-573-01

Notes

- Be sure to turn off the power before cleaning.
- Each block of the system consists of the precision parts and is adjusted precisely. Be careful not to damage each part and to apply excessive force during cleaning.
- As for the S and T side PT rollers, remove dust with washing in the water or using an adhesive tape.
- Do not touch the greased portions during cleaning. If grease adheres to the cleaning cloth, replace it with a new one. Using a cleaning cloth smeared with grease may cause grease to adhere where it should not.
- After cleaning, do not thread the film before the cleaning fluid evaporates completely.

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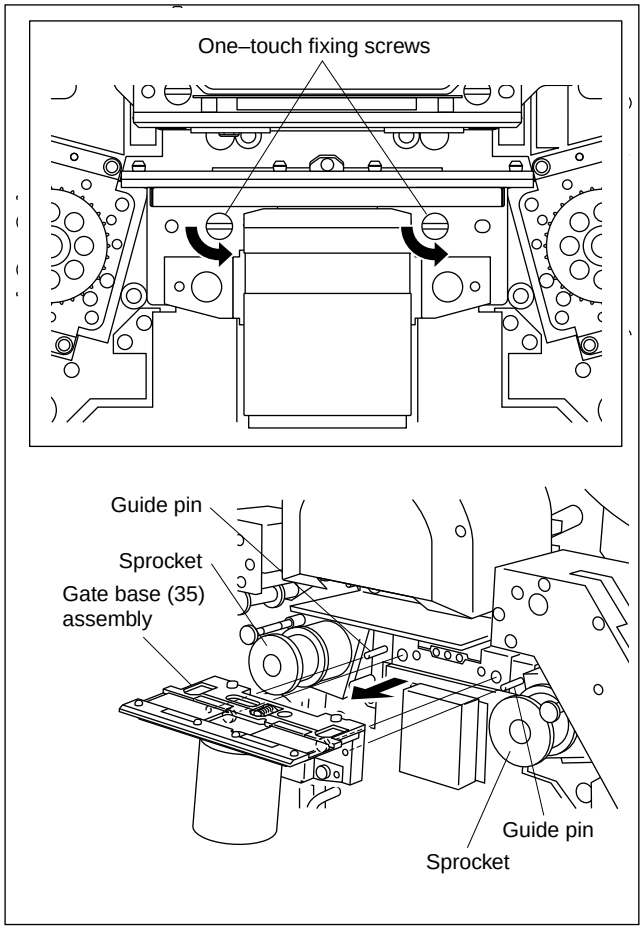
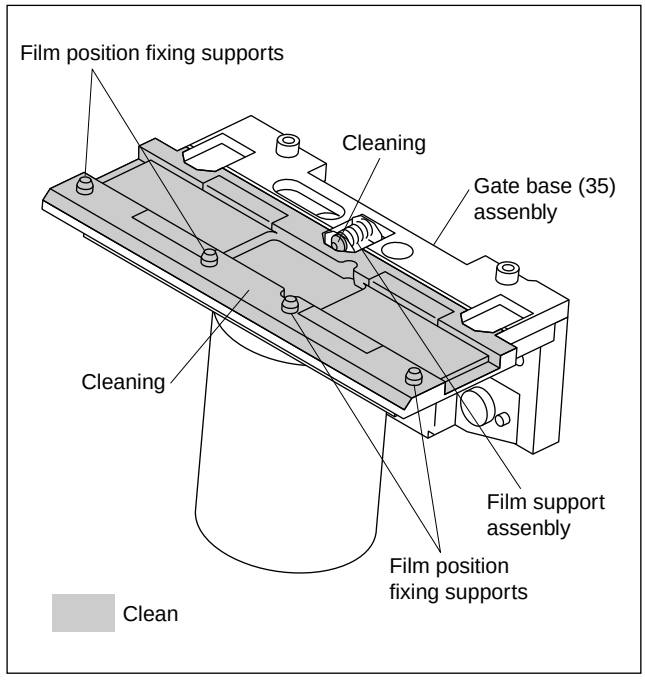
3-2-1. Cleaning the Gate Base (35) assembly

Removing

1. Set a unit in the STANDBY OFF mode.
2. Turn off the power.
3. Release the two one-touch fixing screws with turning 90 degrees counterclockwise, pull the gate base (35) assembly in the direction of arrow, then remove it from the guide pin.



4. Remove the adherence with air etc.
5. Clean the top of the gate with the cleaning cloth to which the cleaning fluid is applied.
6. Wipe the cleaned surface with a dry cloth two or three times.



Installing

Note

When installing, be careful not to hit the gate base against the sprocket.

7. Install the gate base (35) assembly in the reverse order of removing procedure 1 to 3.

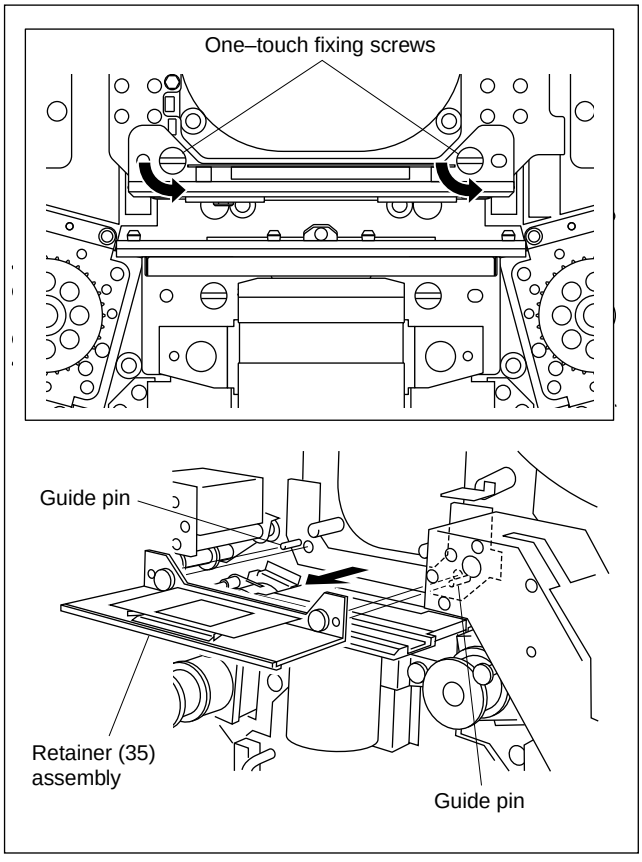
   Reference

   When the groove (−) of the one-touch fixing screw is almost horizontal, the assembly is fixed.

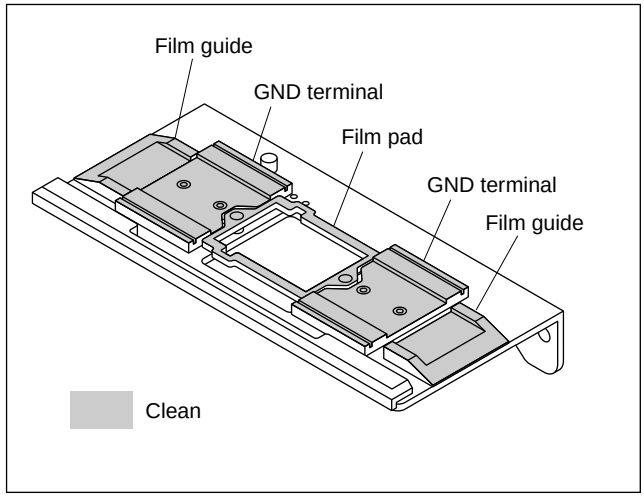
3-2-2. Cleaning the Retainer (35) Assembly

Removing

1. Set a unit in the STANDBY OFF mode.
2. Turn off the power.
3. Pull out the OPS cover toward you.
4. Release the two one-touch fixing screws with turning 90 degrees counterclockwise, pull the retainer (35) assembly in the direction of arrow, then remove it from the guide pin.



5. Remove the adherence with air etc.
6. Clean the portion contacting the gate on the GND terminals, the portion contacting the film on the film pad and film guides with a cleaning cloth to which the cleaning fluid is applied.
7. Wipe the cleaned surface with a dry cloth two or three times.



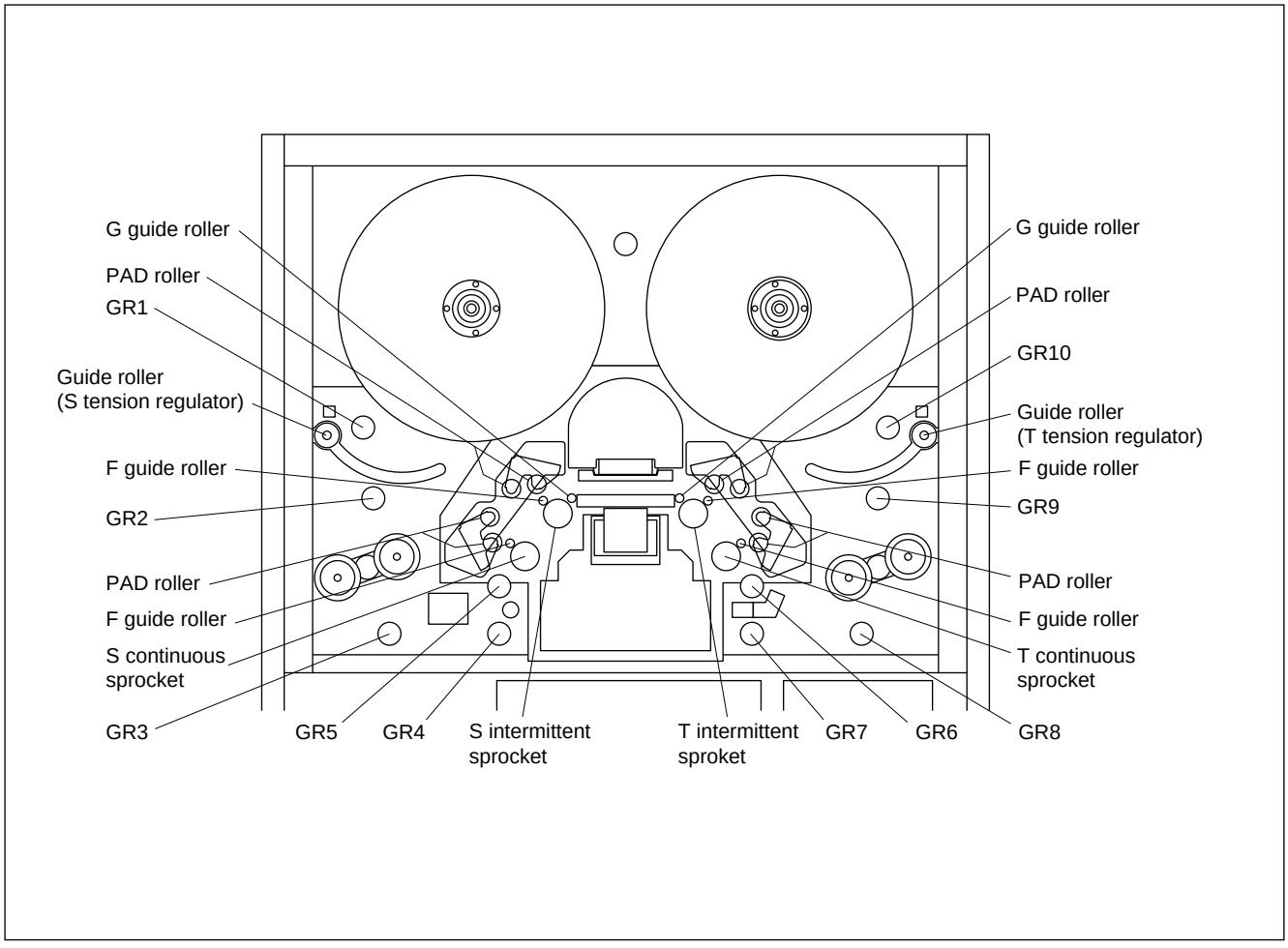
8. Confirm that the GND terminals and film pads can move smoothly up and down.

Installing

9. Install the retainer (35) assembly in the reverse order of removing procedure 1 to 4.
   Reference
   When the groove (−) of the one-touch fixing screw is almost horizontal, the assembly is fixed.

3-2-3. Cleaning the Guide Roller

Clean the guides shown in the figure using a cleaning cloth moistened with cleaning liquid.



3-2-4. Cleaning the PT Roller

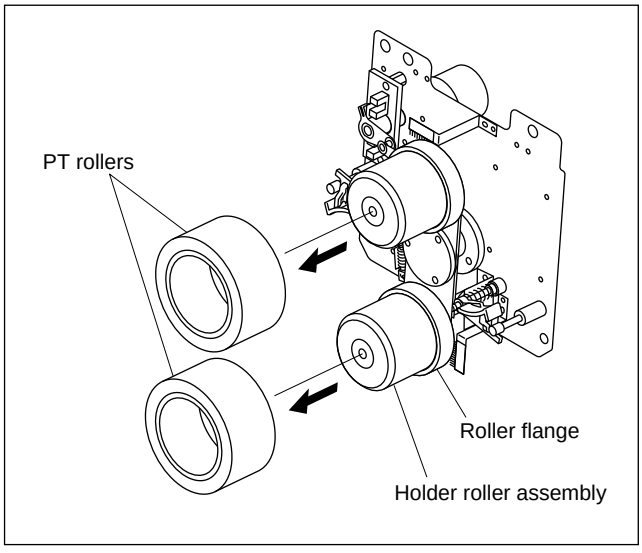
Washing with water

Removing/Installing

1. Remove the PT roller from the holder roller assembly.
2. Wash the PT roller with water.
3. Install the PT roller to the holder roller assembly, and push it in until it hits the roller flange.

Notes

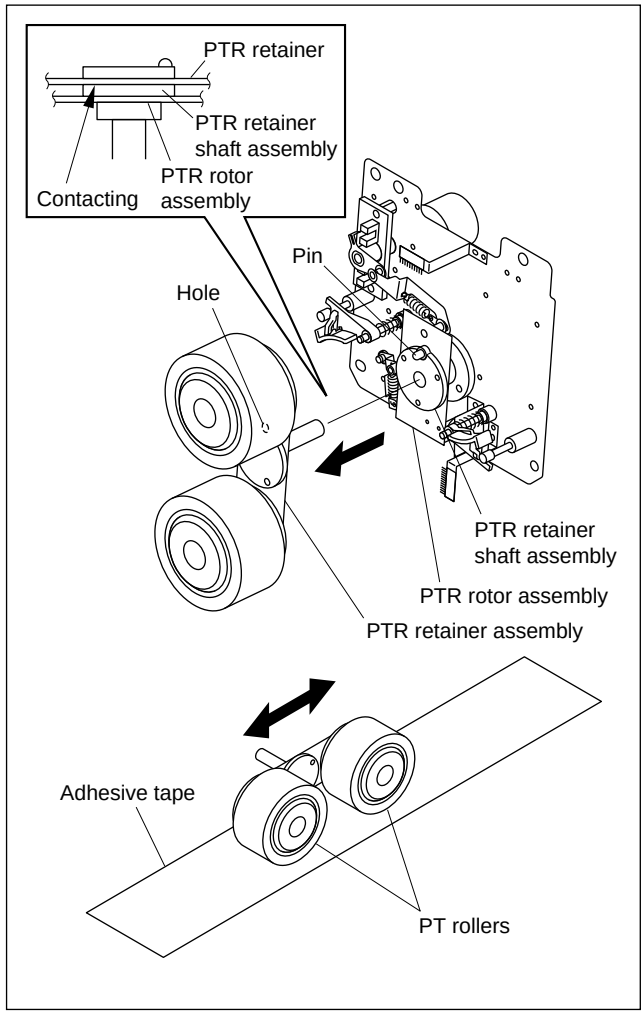
- After washing with water, dry completely and make sure that there is not water remaining, and install.
- When installing, do not touch the external circumference (adhesive side).



Cleaning with adhesive tape

Removing/Installing

1. Remove the whole PTR receiving table with the PT roller installed.
2. Roll the PT roller on the adhesive tape as shown in the figure.
3. Align the hole of the PTR receiving table and the pin position of the PTR roller assembly.
4. Push in the PTR receiving table until the metal plate of the PTR receiving table touches the PTR bearing assembly.



3-3. Cleaning the Optical System

Clean the following to maintain the optimum light amount.
- Lens assembly
- OPS assembly
- FLC assembly (Integrating sphere, F-FLC, HMF, lens, and IR/UV cut filter)

To maintain the performance of the FLC assembly, it is kept at optimum temperature. Clean the following to ensure the cooling effects.
- Fan entrance and heat sink for FLC

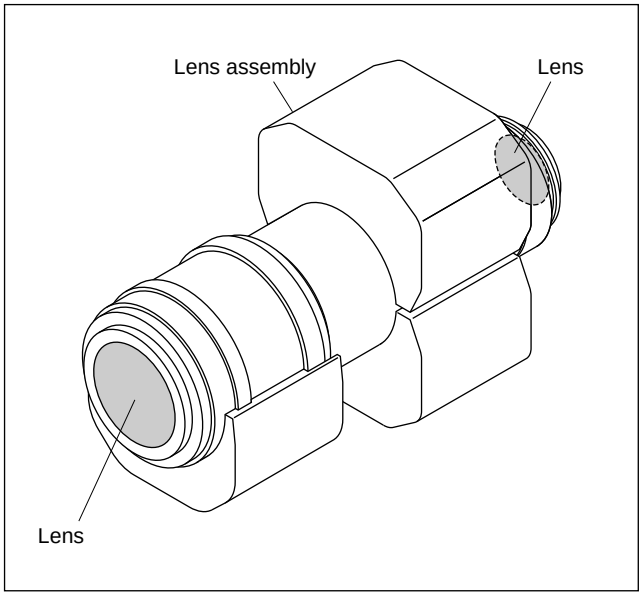
Negligence to clean the following will cause the lamp life to shorten considerably. So be sure to clean periodically.
- Fan exit and heat sink for FLC
- Lamp fan
- Lamp house cover

Tools
- Air blower for optical use (Commercially available product)
- Cleaning cloth for optical use (Commercially available product)
- Cleaning fluid for optical use (Commercially available product)

Notes
- Be sure to turn off the power before cleaning.
- Each block of the system consists of the precision parts and is adjusted precisely. Be careful not to damage each part and to apply excessive force during cleaning.
- As for the S and T side PT rollers, remove dust with washing in the water or using an adhesive tape.
- Do not touch the greased portions during cleaning. If grease adheres to the cleaning cloth, replace it with a new one. Using a cleaning cloth smeared with grease may cause grease to adhere where it should not.
- After cleaning, do not thread the film before the cleaning fluid evaporates completely.

3-3-1. Cleaning the Lens Assembly

1. Remove the lens assembly. (Refer to the instruction manual.)
2. Blow off the dusts on the lens surface using the air blower for optical use.
3. For stubborn dusts which cannot be removed using the air blower, clean with a cleaning cloth moistened with cleaning liquid for optical use.
4. After cleaning, install the lens assembly after the cleaning liquid has evaporated completely.

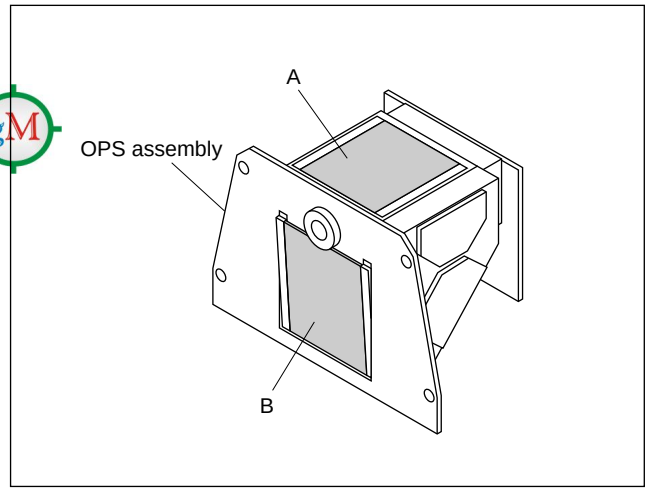


3-3-2. Cleaning the OPS Assembly

1. Remove the gate base (35) assembly. (Refer to section 3-2-1.)
2. Remove the retainer (35). (Refer to section 3-2-2.)
3. Blow off the dusts on side A of the OPS assembly using the air blower for optical use.

For stubborn dirt which cannot be removed with the air blower, or if dirt is adhered to side B of the OPS assembly, remove the OPS assembly using the following procedure, and clean.

4. Disconnect the connector CN1 of the SE-515 board.
5. Remove the four screws, and remove the OPS assembly. (Refer to section 1-10, step 9.)
6. Clean with a cleaning cloth moistened with cleaning liquid for optical use.
7. After cleaning, install the OPS assembly after the cleaning liquid has completely evaporated.



3-3-3. Cleaning the FLC Assembly

1. Remove the gate base (35) assembly. (Refer to section 3-2-1.)
2. Remove the integrating sphere from the gate base (35) assembly.
3. Loosen the four screws, and pull out the lamp house assembly. (Refer to section 3-4-1.)
4. Loosen the three screws (with stopper), and remove the lamp house cover. (Refer to section 3-4-1.)

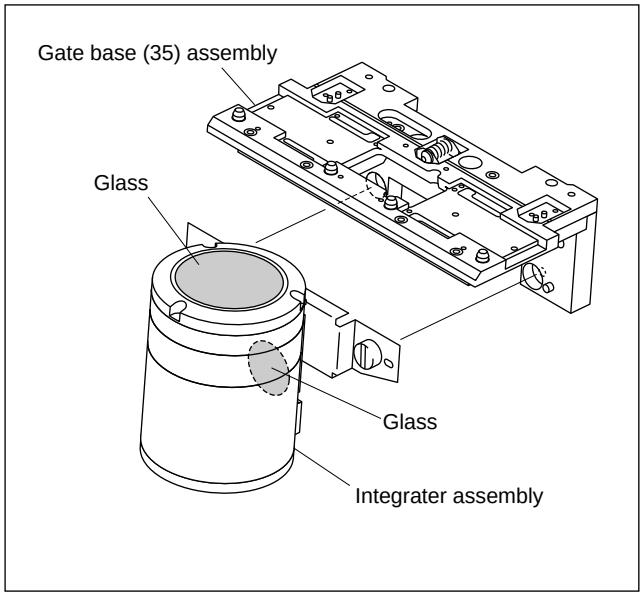
Integrating sphere

(1) Blow off the dusts on the glass surface of the integrating sphere (2 locations) using the air blower for optical use.

(2) For stubborn dusts which cannot be removed using the air blower, clean with a cleaning cloth moistened with cleaning liquid for optical use.

Note

After cleaning, install the integrating sphere after the cleaning liquid has evaporated completely.



F-FLC

Note

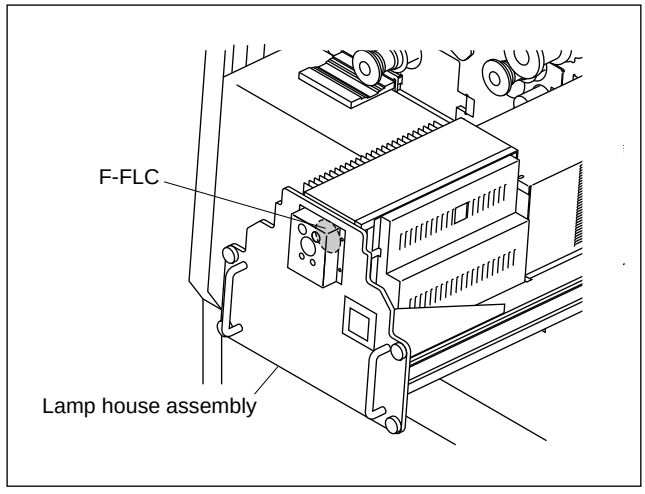
Do not push the glass side of the F-FLC with force or hit it with a hard object as this may cause the performance of the FLC assembly to drop considerably, or disable use.

(1) Blow off the dusts on the glass side of the F-FLC using the air blower for optical use.

(2) For stubborn dusts which cannot be removed using the air blower, clean with a cleaning cloth moistened with cleaning liquid for optical use.

Note

After cleaning, install the lamp house assembly after the cleaning liquid has evaporated completely.

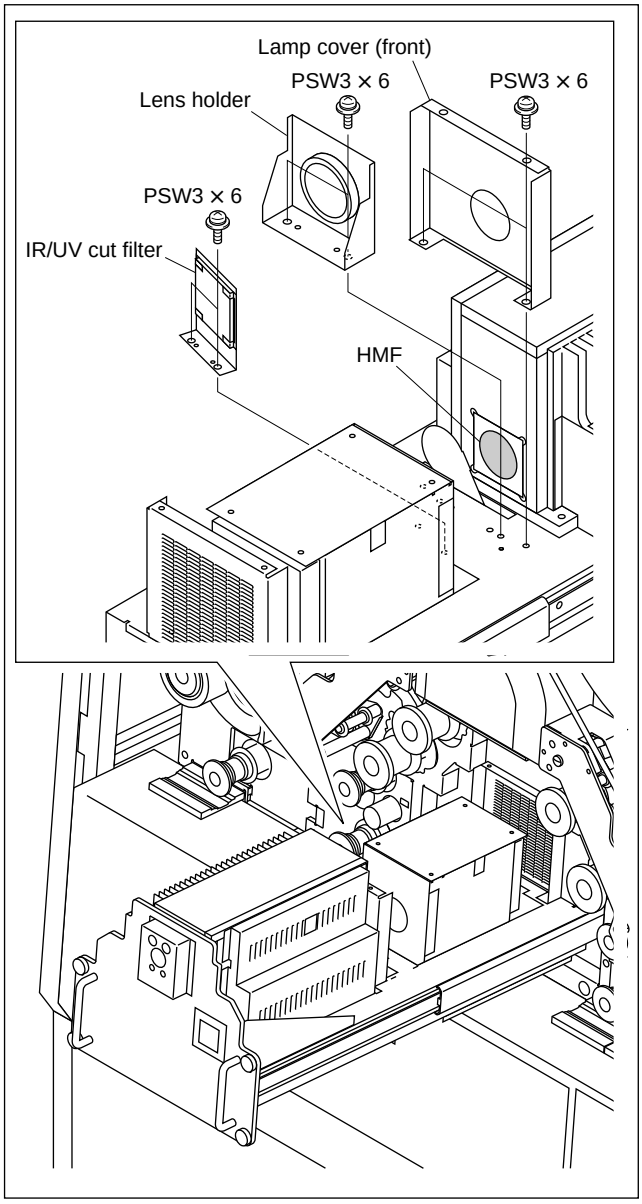


HMF

(1) Remove the two screws, and remove the IR/UV cut filter.
(2) Remove the four screws, and remove the lens attaching plate and lamp cover (front).
(3) Blow off the dusts on the HMF using the air blower for optical use.
(4) For stubborn dusts which cannot be removed using the air blower, clean with a cleaning cloth moistened with cleaning liquid for optical use.

Note

After cleaning, install the lamp house assembly after the cleaning liquid has evaporated completely.

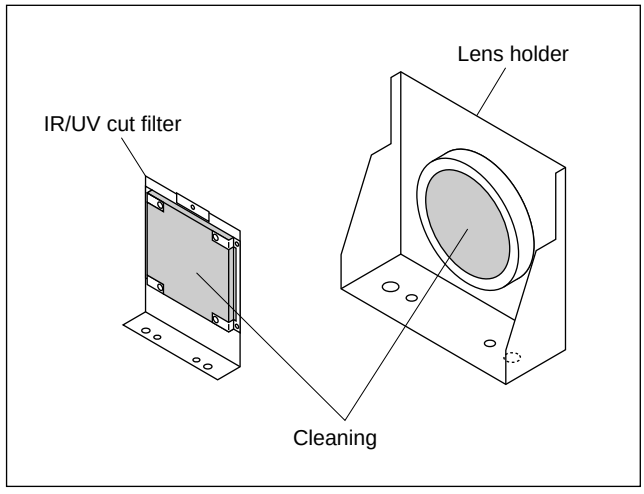


Lens and IR/UV Cut Filter

(1) Blow off the dusts on the lens and IR/UV cut filter using the air blower for optical use.
(2) For stubborn dusts which cannot be removed using the air blower, clean with a cleaning cloth moistened with cleaning liquid for optical use.

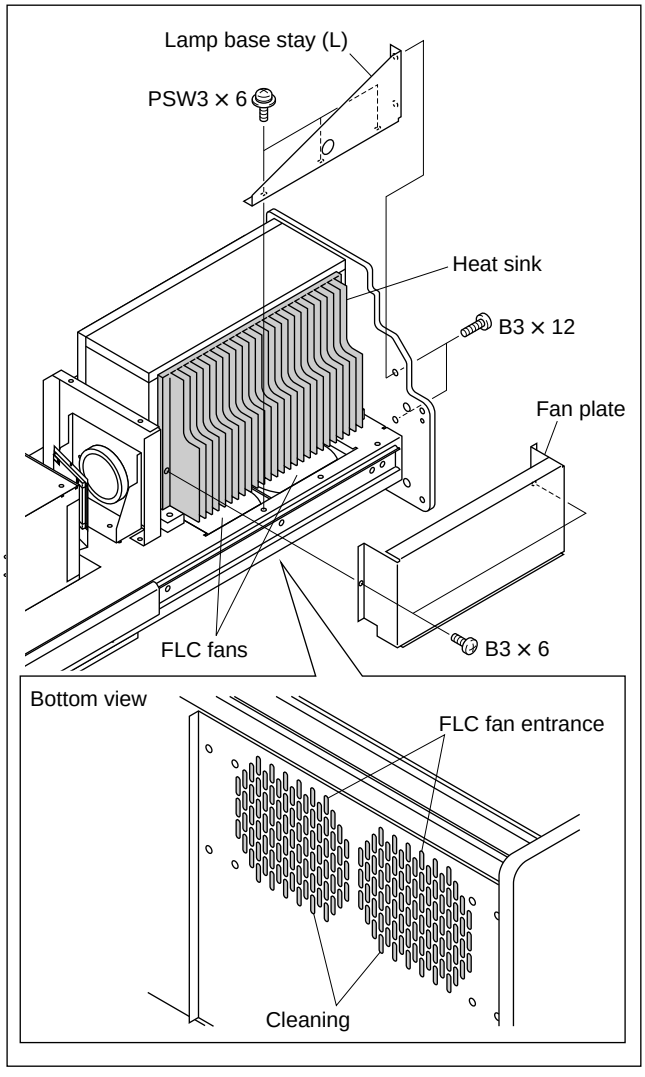
Note

After cleaning, install the lamp house assembly after the cleaning liquid has evaporated completely.



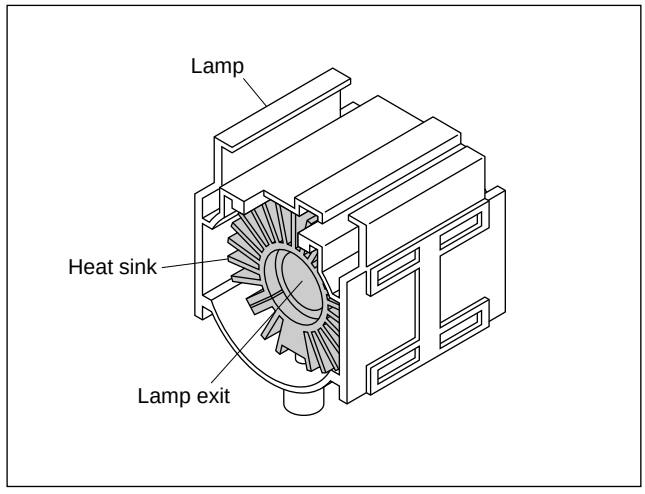
FLC Fan Entrance and Heat Sink

(1) Remove the three screws, and remove the lamp house stay (L).
(2) Remove the two screws, and remove the plate for fan.
(3) Vacuum the dusts on the heat sink using a vacuum cleaner, etc.
(4) Vacuum the dusts on the fan entrance using a vacuum cleaner, etc.
(5) Wipe off the dirt on the fan entrance and heat sink using a dry cloth.



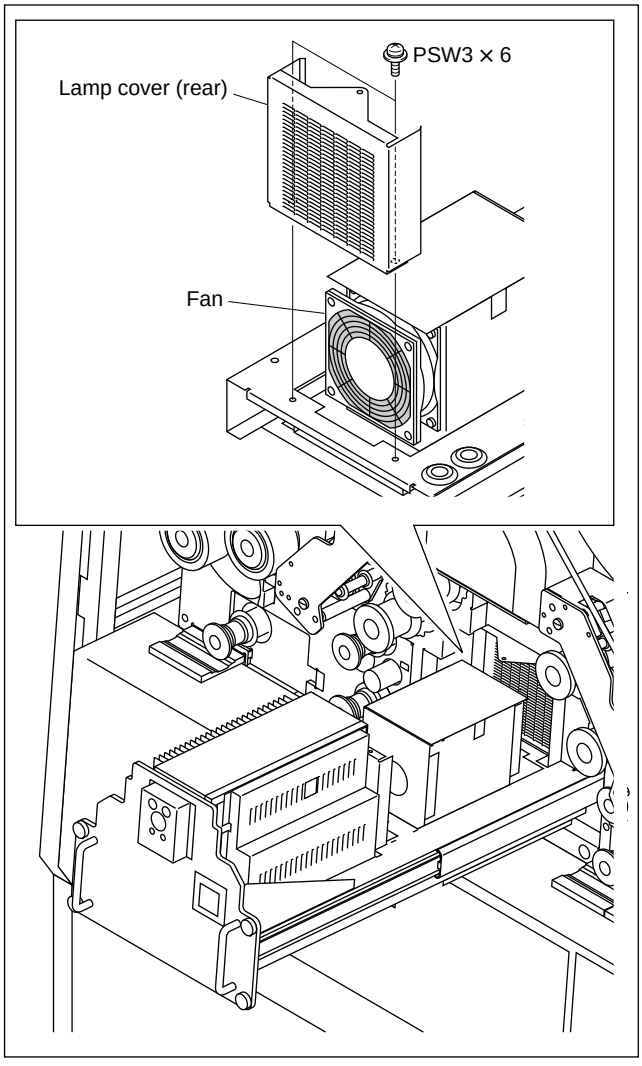
Lamp Exit and Heat Sink

(1) Vacuum the dusts on the lamp exit and heat sink using a vacuum cleaner, etc.
(2) Wipe off the dirt on the lamp exit and heat sink using a dry cloth.



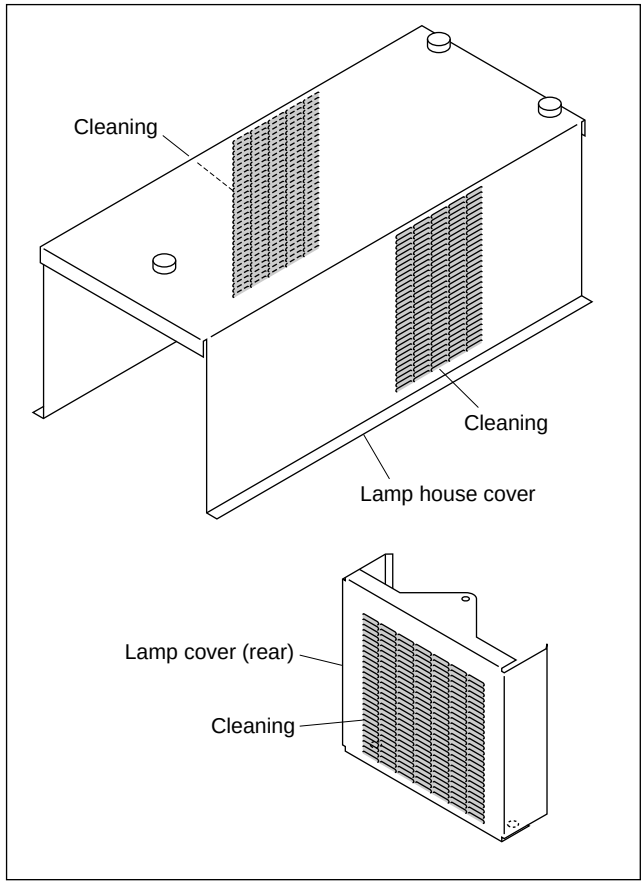
Lamp Fan

(1) Remove the two screws, and remove the lamp cover (rear).
(2) Vacuum the dusts on the fan using a vacuum cleaner, etc.
(3) Wipe off the dirt on the fan using a dry cloth.



Lamp House Cover

(1) Vacuum the dusts on the lamp house cover using a vacuum cleaner, etc.
(2) Wipe off the dirt on the lamp house cover using a dry cloth.



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3-4. Replacement of Periodic Replacement Part

3-4-1. Replacing Lamp

When the message of recommending the lamp replacement is displayed on the liquid crystal panel of the control panel or the lamp does not light, replace the lamp according to the following procedure.

CAUTION

Air-cool the lamp before replacing it.
The lamp is still heated immediately after turning the power off, so there is a danger of causing burns with touching it. When replacing the lamp, turn off the power, wait for 5 minutes, confirm that the lamp power indicator stops flashing, turn off the AC power supply which supplies the power to the FVS-1000, wait for about twenty minutes until the lamp is air-cooled, then replace the lamp.

WARNING

Observe the following when installing or replacing the lamp. If not the lamp can burst and may result in injury.

- Do not hit the lamp against something, apply the excessive pressure to it or hurt it.
- Do not give a vibration or shock to the lamp.
- Do not touch the glass ball and reflecting mirror of the lamp with bare hands.
- Do not use the not-specified lamp.

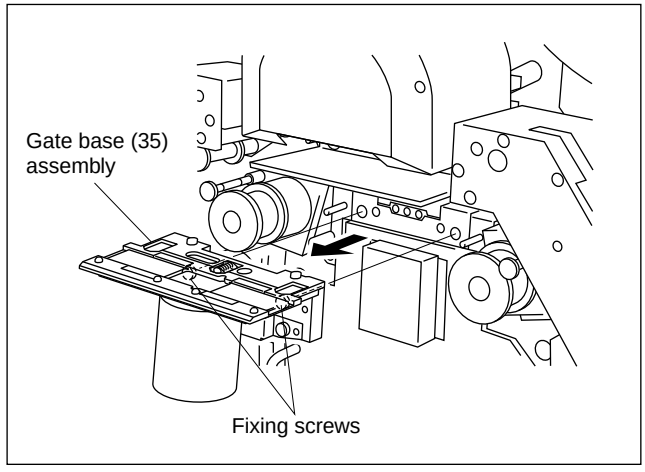
Removing

1. Turn off the AC power supply which supplies the power to the FVS-1000.

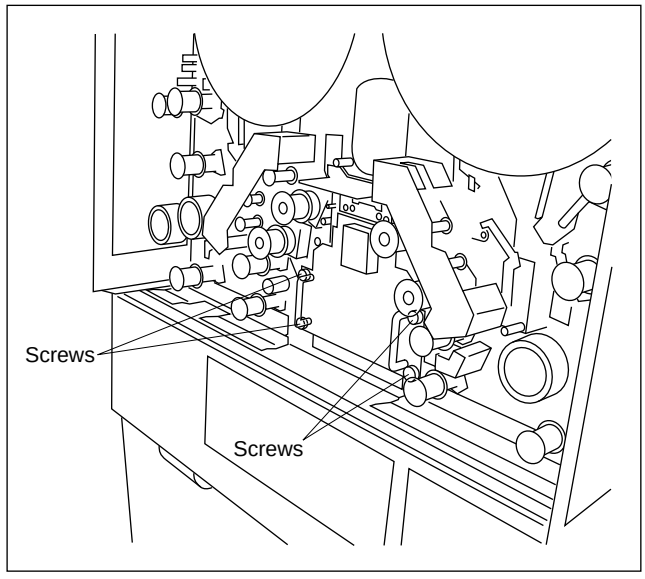
Note

To prevent an electric shock, be sure to turn off the power of the AC power supply which supplied the power to the FVS-1000 before removing.

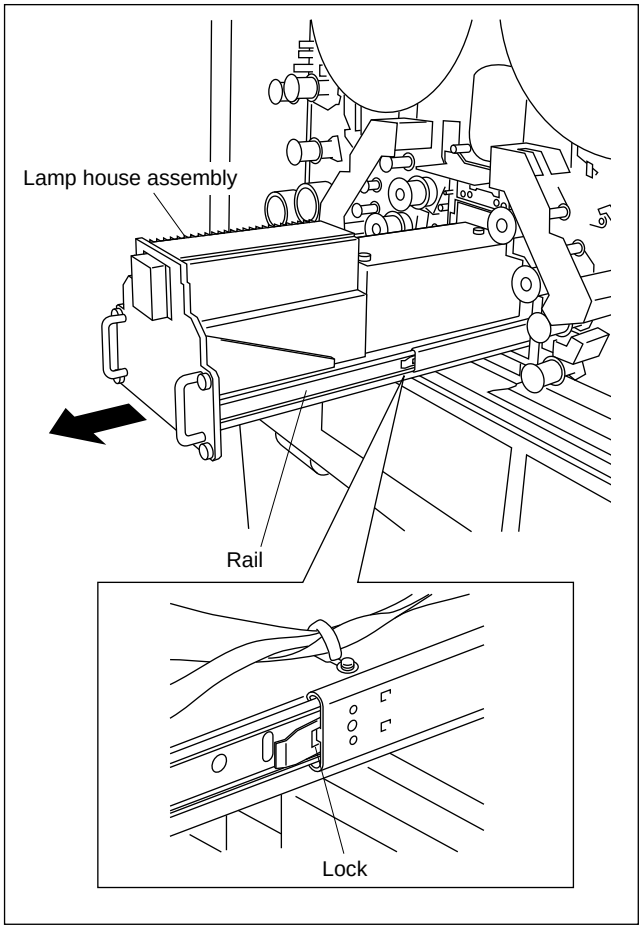
2. Remove the gate base (35) assembly. (Refer to item 3-2-1.)



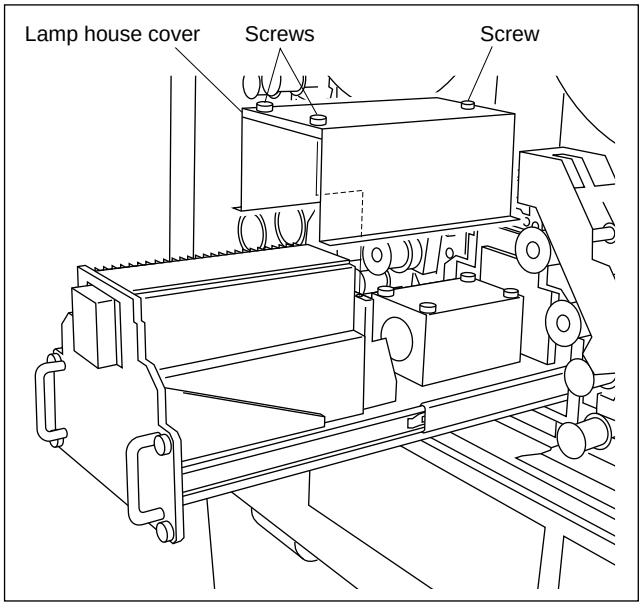
3. Loosen the four falling-proof screws.



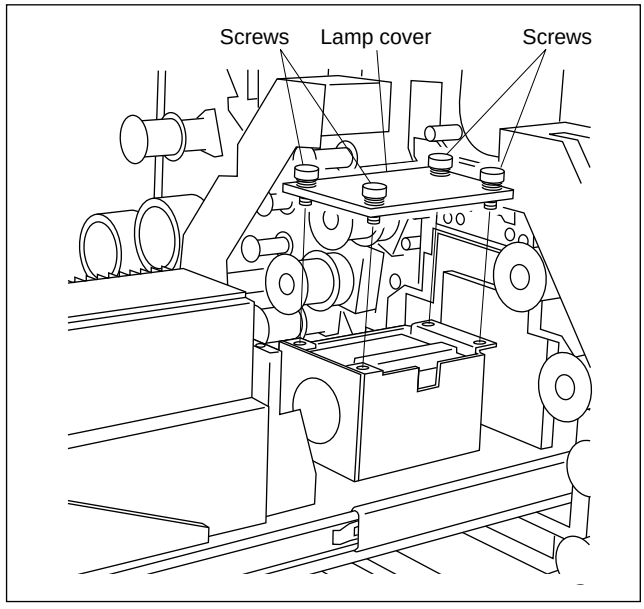
4. Pull out the lamp house assembly in the direction of arrow until the rail is locked.4. Pull out the lamp house assembly in the direction of arrow until the rail is locked.



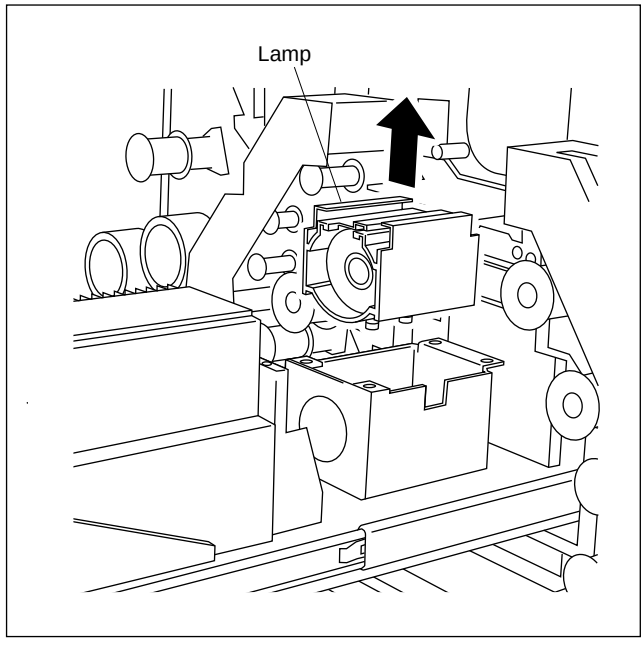
5. Loosen the three falling-proof screws, then remove the lamp house cover.



6. Loosen the four falling-proof screws, then remove the lamp cover.



7. Pull up the used lamp cased in the blue plastic box.

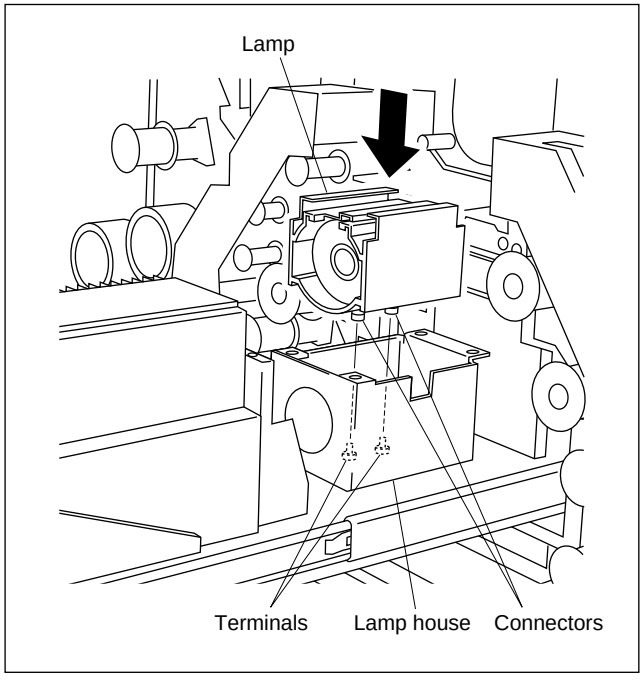


Installing

CAUTION

Be careful not to damage the glass surface of the lamp or not to make it dirty.

8. Connect the connectors of the new lamp with the terminals of the lamp house in the direction of arrow.



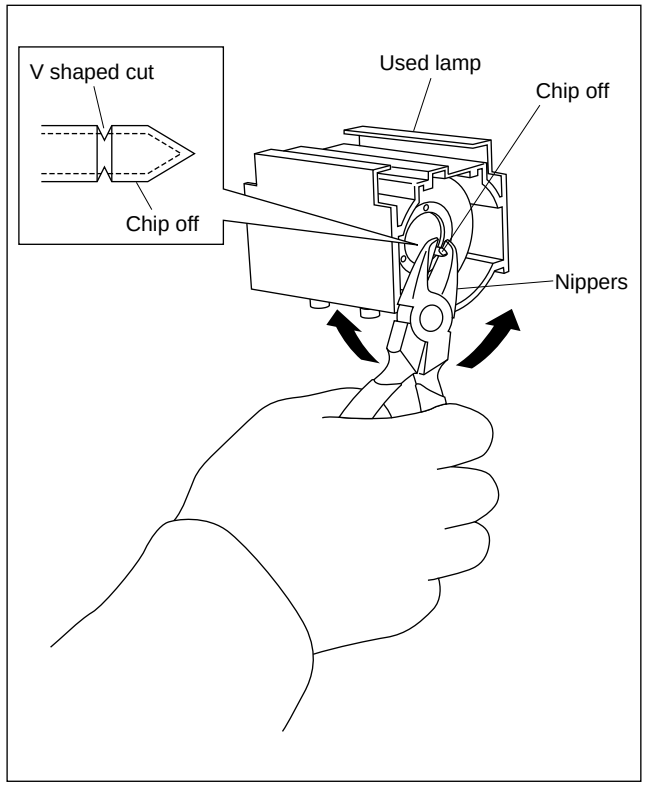
9. Install the removed parts in the reverse order of this procedure.
10. Confirm that when turning on the AC power supply and turning on the system, the lamp lights and the message recommending the lamp replacement is not displayed on the liquid crystal panel of the control panel.

Before scrapping the used lamp

Nip the chip off at the rear side of the lamp with nippers etc., then make V shaped cutting on it with turning nippers in the direction of arrow until you hear the sound of gas's going out of the lamp. Be sure to let gas out of the lamp before scrapping it.

CAUTION

When cutting, cover the lamp with a towel etc. not to scatter the cut pieces of the chip off.



3-4-2. Replacing the I Sprocket and C Sprocket

This section describes the replacement of the C sprocket (T side), but the C sprocket (S side) and I sprocket (S side and T side) can be replaced in the same way.

Removal

1. Turn OFF the AC power supplied to the FVS-1000.

Note

Be sure to turn off the AC power supplied to the FVS-1000 first before proceeding with the work due to the risk of electrical hazards.

2. Remove the F-GR flange using the slotted screwdriver (middle).

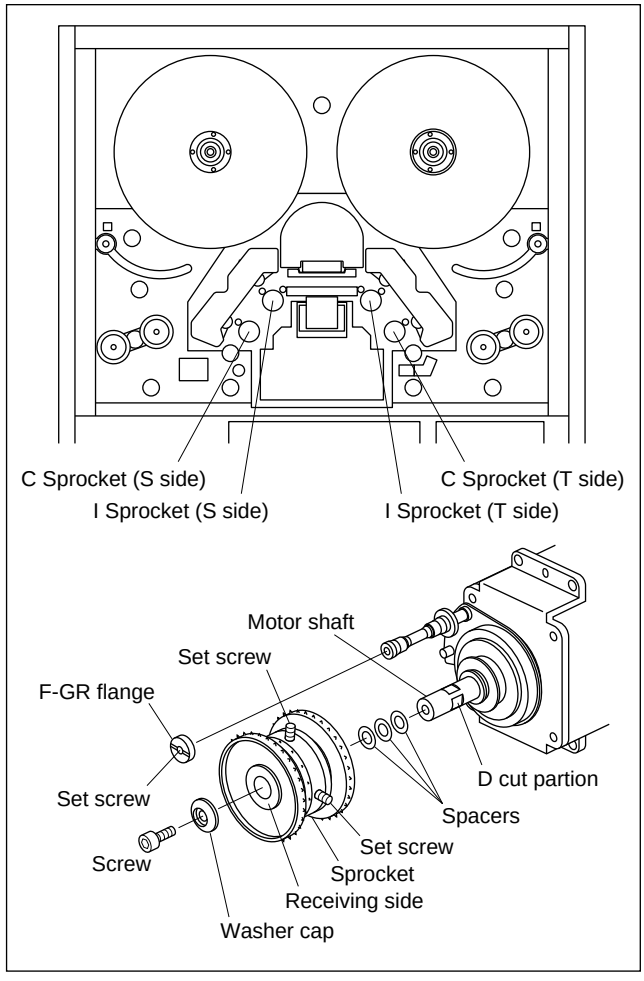
   Note

   The height of the F-GR flange has been adjusted. Do not rotate the setscrew.

3. Remove the hexagonal screw with hole on the sprocket.
4. Remove the washer CAP.
5. Loosen the two setscrews on the side completely, and remove the sprocket.

   Note

   The spacer for adjusting height is installed between the sprocket and motor. Be careful not to lose it.



Installation

6. With the receiving side with the largest diameter at the top, align the position of the D cut portion of the motor shaft and the setscrew, and install the sprocket.
7. Tighten the setscrew after installing the sprocket.
8. Install the washer cap, and secure with the hexagonal screw with hole.
9. Install the F-GR flange using a slotted screwdriver (middle).

3-4-3. Replacing the Filter Assembly

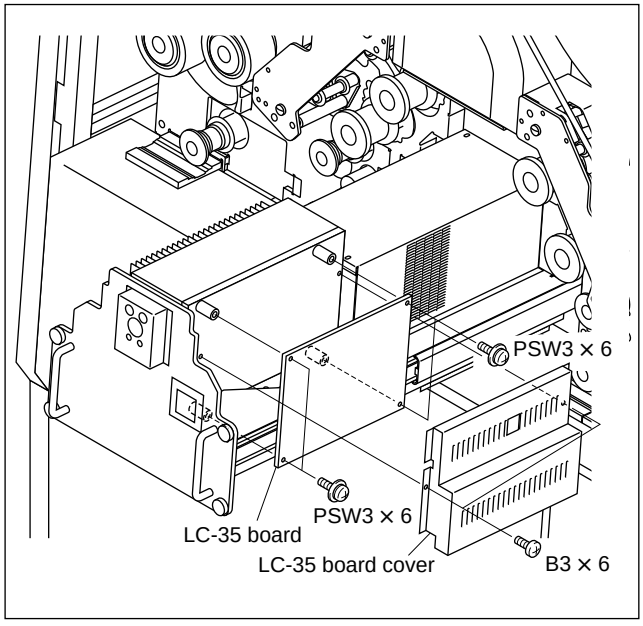
Removal

1. Turn OFF the AC power supplied to the FVS-1000.

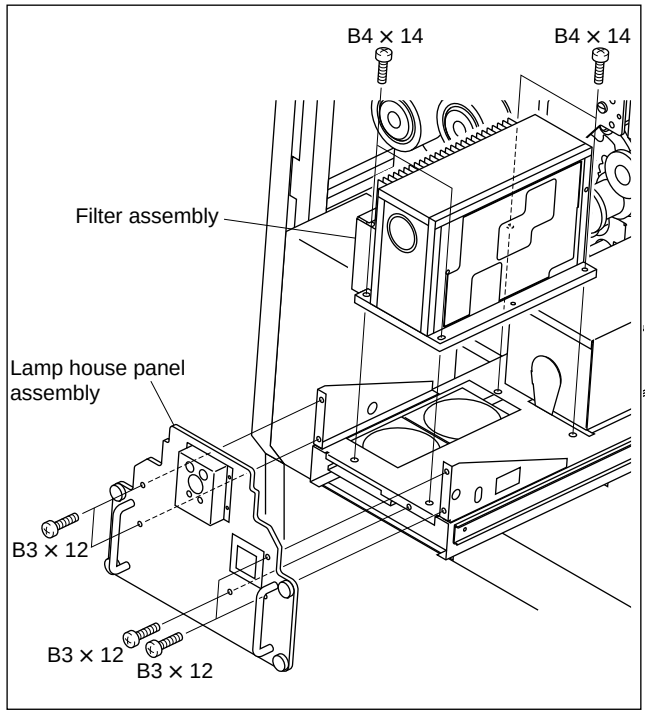
Note

Be sure to turn off the AC power supplied to the FVS-1000 first before proceeding with the work due to the risk of electrical hazards.

2. Remove the gate base (35) assembly. (Refer to section 3-2-1.)
3. Loosen the four screws, and pull out the lamp house assembly. (Refer to section 3-4-1.)
4. Remove the LC-35 board cover.
5. Disconnect all connectors connected, and remove the LC-35 board.



6. Remove the six screws, and remove the lamp house front panel.
7. Remove the four screws, and remove the filter assembly.

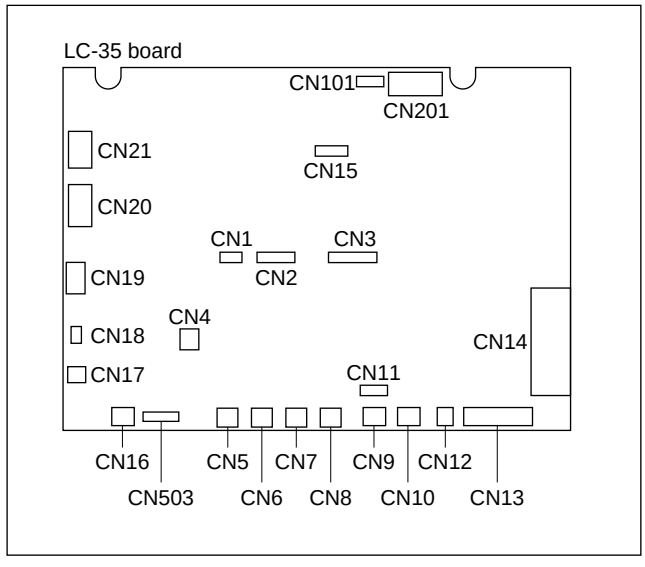


Installation

8. Perform the reverse of steps 1 to 7 of the removal procedure.

Note

Refer to the following diagram for the connection of connectors to the LC-35 board.



3-4-4. Replacing the IR/UV Cut Filter

Removal

1. Turn OFF the AC power supplied to the FVS-1000.

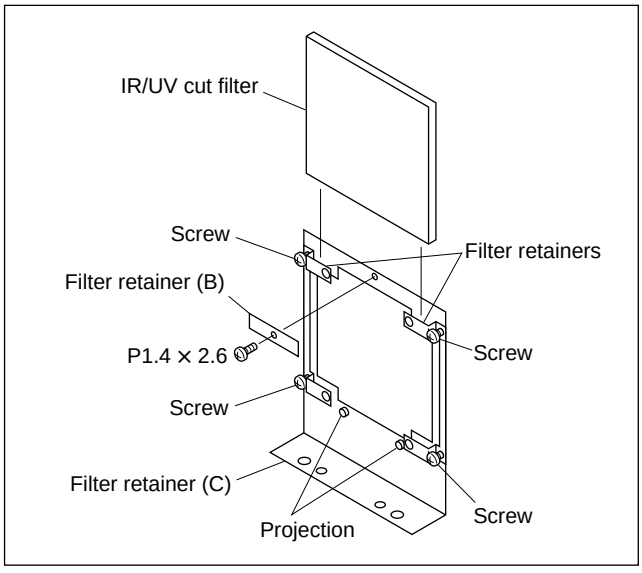
Note

Be sure to turn off the AC power supplied to the FVS-1000 first before proceeding with the work due to the risk of electrical hazards.

2. Remove the gate base (35) assembly. (Refer to section 3-2-1.)
3. Loosen the four screws, and pull out the lamp house assembly. (Refer to section 3-2-1.)
4. Remove the lamp house cover. (Refer to section 3-4-1.)
5. Remove the two screws (PSW3 × 6), and remove the IR/UV cut filter together with the filter holder.
6. Remove the screw (P1.4 × 1.6), and remove the filter holder (B).
7. Loosen the four screws securing the filter holder by one to several rounds.
8. Pull out the IR/UV cut filter, and replace with the new filter.

Note

The front and rear sides of the filter are the same.



Installation

9. Perform the reverse of steps 1 to 7 of the removal procedure.

Section 4
Replacement of Main Parts

4-1. General Information on Parts Replacement

Tightening Torque of Screws

Screws must be tightened with the following tightening torque.

Hexagonal screws with hole	(M3) : 1.0 N•m (10 kgf•cm)
Hexagonal screws with hole	(M4) : 2.5 N•m (25 kgf•cm)
Hexagonal screws with hole	(M5) : 3.5 N•m (35 kgf•cm)
Screw (+)	(M3) : 0.8 N•m (8 kgf•cm)
Screw (+)	(M4) : 1.4 N•m (14 kgf•cm)

4-2. Replacing the Pad Assembly

Notes

The pad assembly is adjusted for each unit.
Do not install to other FVS-1000s.
When the film is run without adjusting, the film may damage.
To install to other FVS-1000, there is a need to adjust the clearance with the sprocket.

35S Pad Assembly

Removal

1. Removing the pad assembly

Rotate the two screws of the A portion with your fingers in the counterclockwise direction, and remove the 35S pad assembly.

Installation

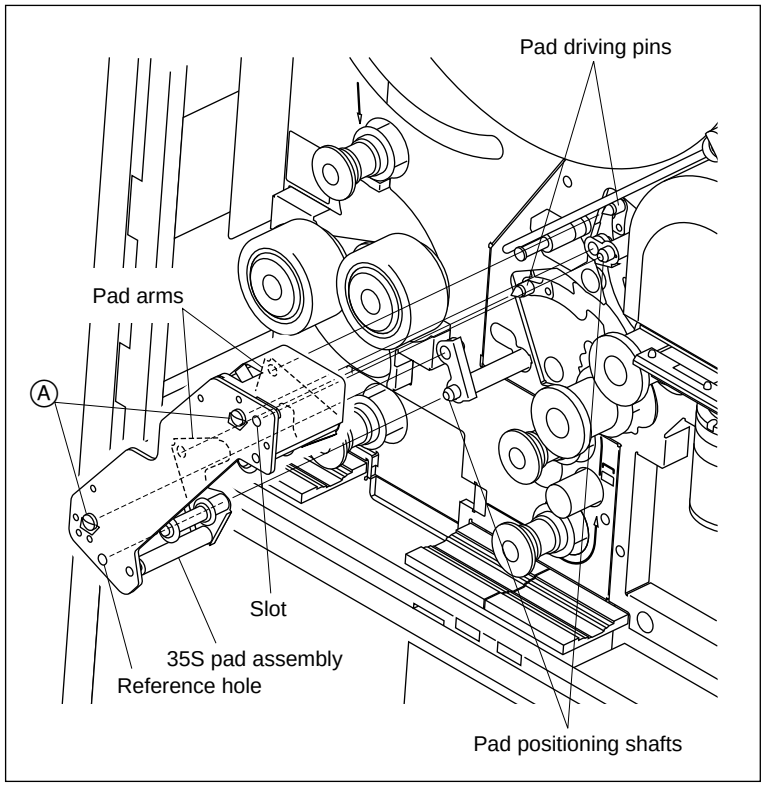
2. Installing the pad assembly

(1) Align the reference hole and long hole of the 35S pad assembly and the pad positioning shaft.

Note

At this time, check that the pad drive pin enters the slot of the pad arm.

(2) Press the 35S pad assembly against the base plate, rotate the two screws of the A portion with your fingers in the counterclockwise direction, and install.



35T Pad Assembly

Removal

1. Removing the pad assembly

Rotate the two screws of the A portion with your fingers in the counterclockwise direction, and remove the 35T pad assembly.

Installation

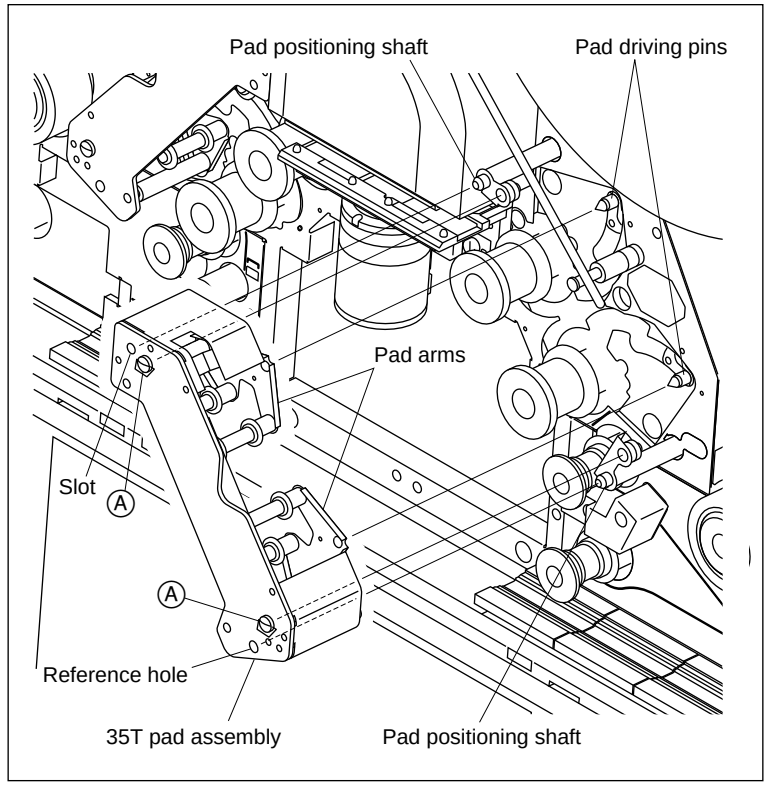
2. Installing the pad assembly

(1) Align the reference hole and long hole of the 35T pad assembly and the pad positioning shaft.

Note

At this time, check that the pad drive pin enters the slot of the pad arm.

(2) Press the 35T pad assembly against the base plate, rotate the two screws of the A portion with your fingers in the counterclockwise direction, and install.



4-3. Replacing the PT Assembly

Preliminary preparation

Remove the PT roller. (Refer to section 3-2-4.)

Tools

- Torque wrench (For 60 kgf•cm)
- Torque driver bit (For M5)

Removal

1. Removing the FTP panel

- S side: FTP panel B
- T side: FTP panel C

(Refer to section 2-7-4.)

2. Removing the side panel

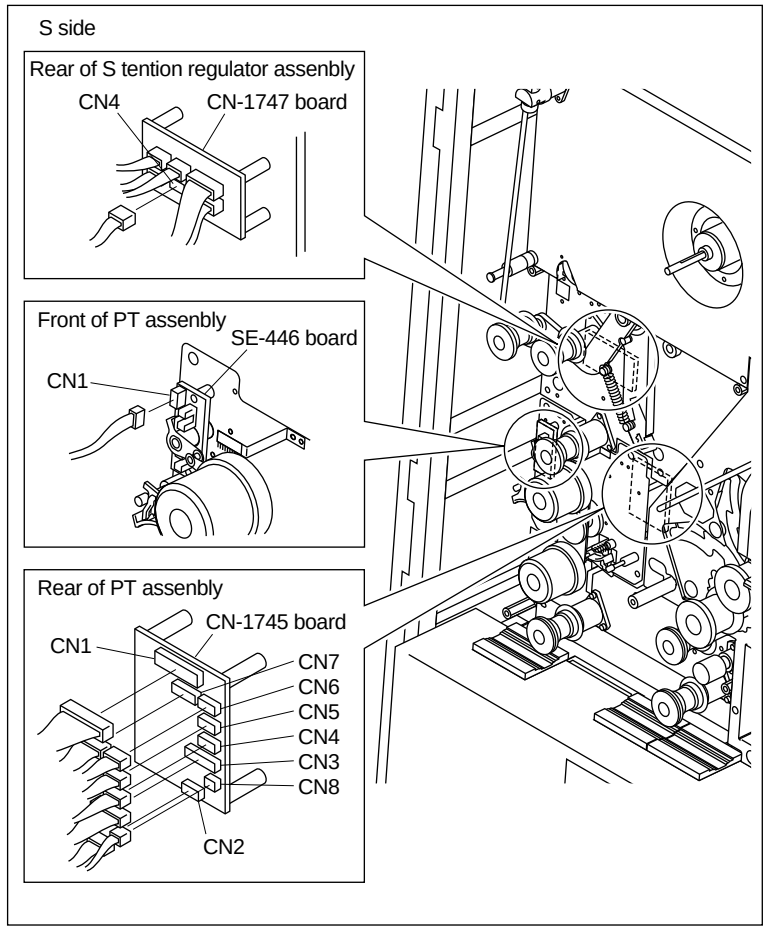
- S side: Left side panel
- T side: Right side panel

(Refer to section 2-7-4.)

3. Disconnecting the connectors

Disconnect the following connectors.
S side:

- CN4/CN-1747 board
  (Rear of S tension regulator assembly)
- CN1 to CN8/CN-1745 board
  (Rear of PT assembly)
- CN1/SE-446 board (Front of PT assembly)



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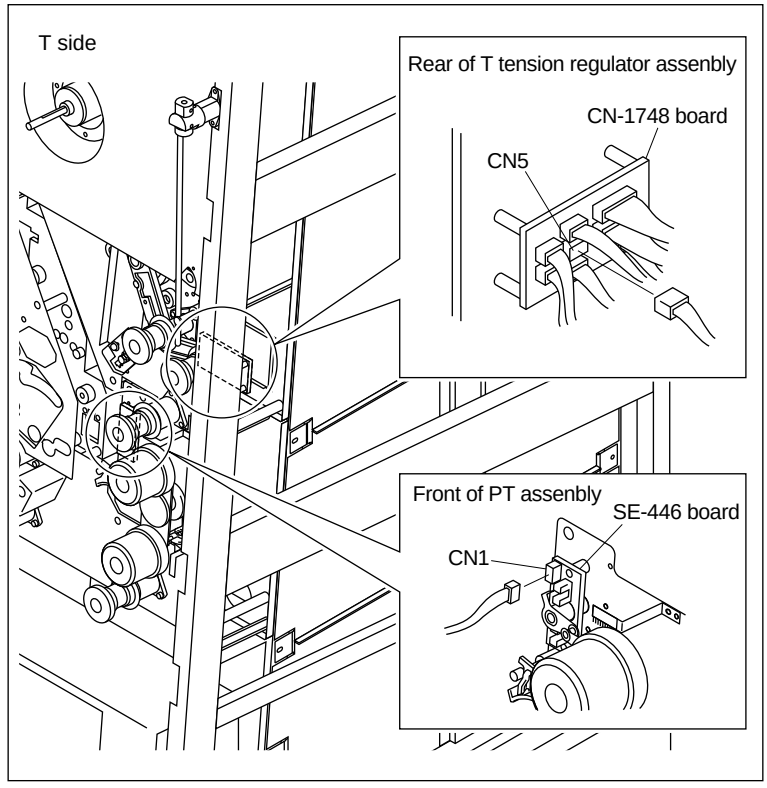
T side:
- CN5/CN-1748 board (Rear of T tension regulator assembly)
- CN1/SE-446 board (Front of PT assembly)



4. Removing the PT assembly

Remove the four screws, and remove the PT assembly.

Installation

5. Installing the PT assembly

Install the PT assembly using the four screws.

6. Connecting the connector

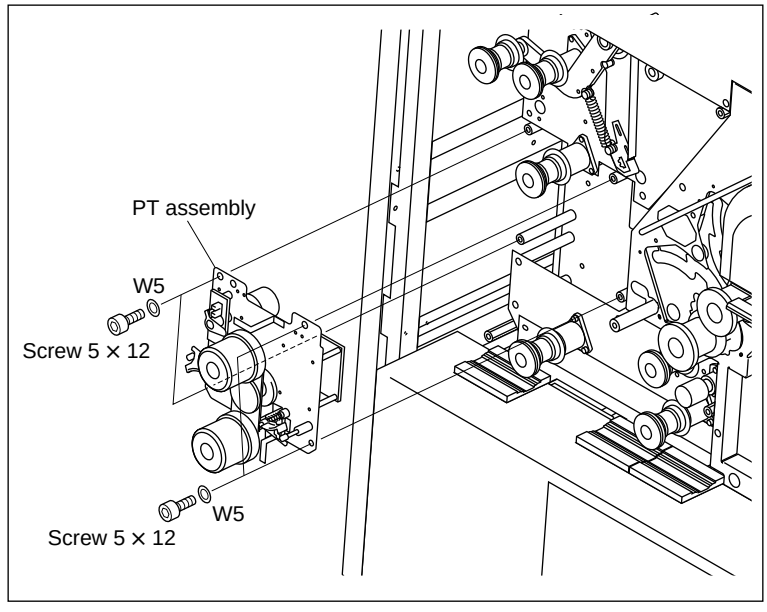
Connect the connector removed in step 3.

7. Installing the side panel

Install the side panel removed in step 2.
(Refer to section 2-7-4.)

8. Installing the FTP panel

Install the FTP panel removed in step 1.
(Refer to section 2-7-4.)



4-4. Replacing the Reel Assembly

Tools

- Torque wrench (For 60 kgf•cm)
- Torque driver bit (For M5)

Removal

1. Removing the side and top panels

Remove the side and top panels.
(Refer to section 2-7-1.)

2. Removing the rear panel (top)

Remove the rear panel (top).
(Refer to section 2-7-2.)

3. Removing the door

Remove the door. (Refer to section 2-7-3.)

4. Removing the FTP panel

- S side: FTP panels A and B
- T side: FTP panels A and C

(Refer to section 2-7-4.)

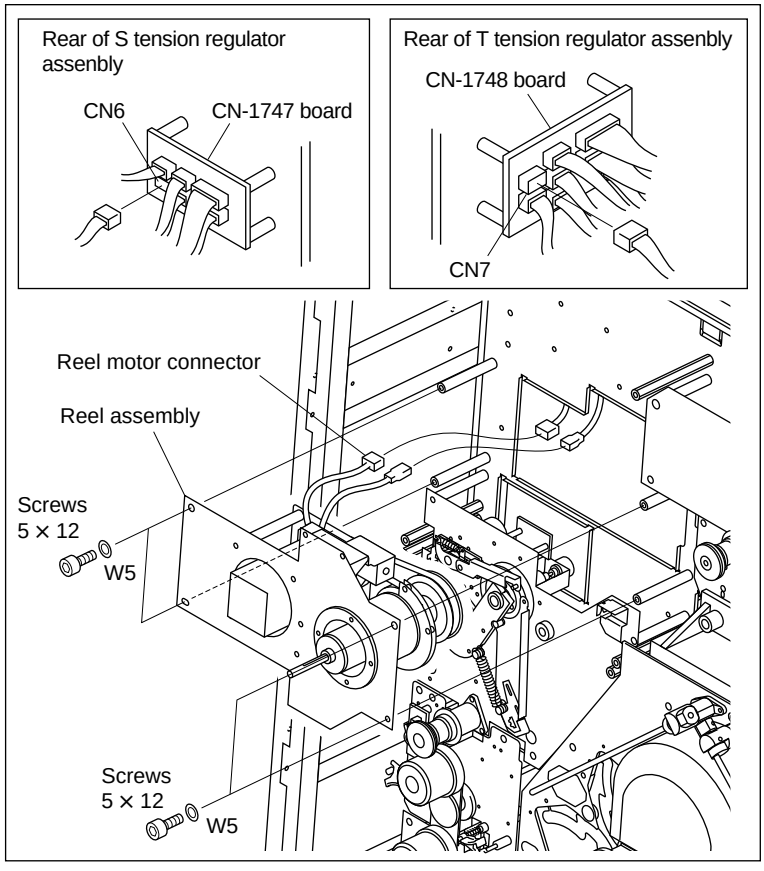
5. Disconnecting the connectors

Disconnect the following connectors, and remove the harness from the wiring stopper.
S side:
- CN6/CN-1747 board
- S reel motor

T side:
- CN7/CN-1748 board
- T reel motor

6. Removing the reel assembly

Remove the four screws, and remove the reel assembly.



Installation

7. Installing the reel assembly
Install the reel assembly using the four screws.

8. Connecting the connectors
Connect the connectors removed in step 5.

9. Installing the FTP panel
Install the FTP panel removed in step 4.
(Refer to section 2-7-4.)

10. Installing the door
Install the door removed in step 3.
(Refer to section 2-7-3.)

11. Installing the rear panel (top)
Install the rear panel (top) removed in step 2.
(Refer to section 2-7-2.)

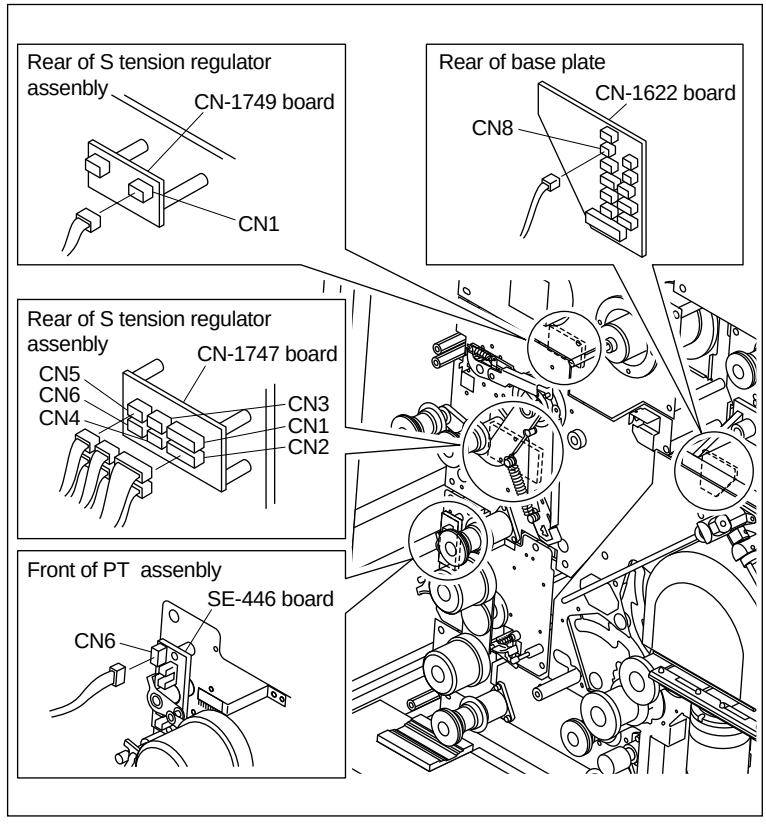
12. Installing the side and top panels
Install the side and top panels removed in step 1.
(Refer to section 2-7-1.)

4-5. Replacing the Tension Regulator Assembly

Tools

- Phillips driver
- Torque wrench (For 60 kgf•cm)
- Torque driver bit (For M5)

Removal



1. Removing the side and top panels

Remove the side and top panels.
(Refer to section 2-7-1.)

2. Removing the rear panel (top)

Remove the rear panel (top).
(Refer to section 2-7-2.)

3. Removing the door

Remove the door. (Refer to section 2-7-3.)

4. Removing the FTP panel

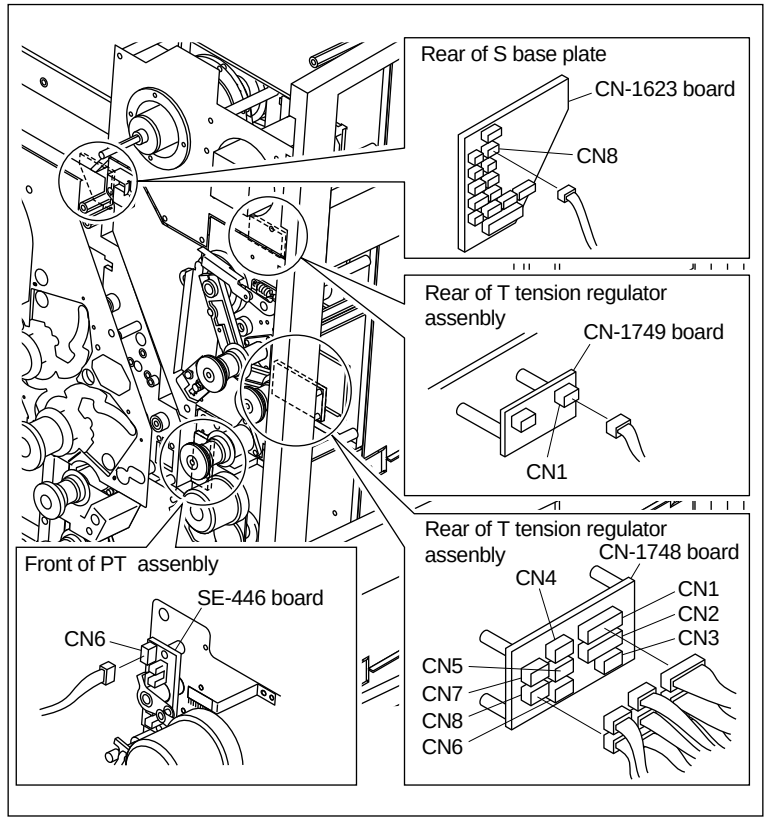
S side: FTP panels A and B
T side: FTP panels A and C
(Refer to section 2-7-4.)

5. Disconnecting the connectors

Disconnect the following connectors, and remove the harness from the wiring stopper.
S side:

- CN6/SE-446 board
- CN1 to CN6/CN-1747 board
- CN1 /CN-1749 board
- CN8/CN-1622 board

T side:
- CN6/SE-446 board
- CN1 to CN6/CN-1748 board
- CN1/CN-1749 board
- CN8/CN-1623 board



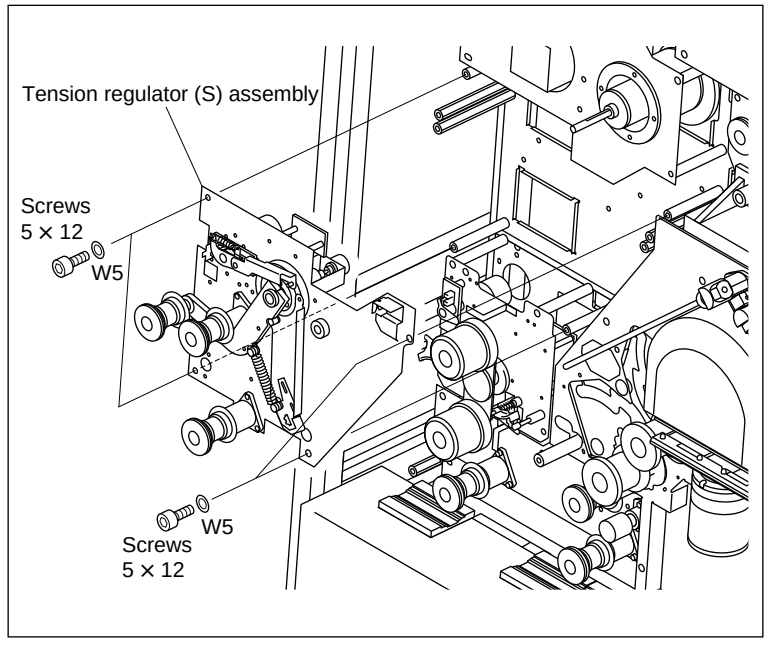
6. Removing the tension regulator assembly

Remove the four screws, and remove the tension regulator assembly.

Installation

7. Installing the tension regulator assembly

Install the tension regulator assembly using the four screws.



8. Connecting connectors

Connect the connectors removed in step 5.

9. Installing the FTP panel

Install the FTP panel removed in step 4.
(Refer to section 2-7-4.)

10. Installing the door

Install the door removed in step 3.
(Refer to section 2-7-3.)

11. Installing the rear panel (top)

Install the rear panel (top) removed in step 2.
(Refer to section 2-7-2.)

12. Installing the side and top panels

Install the side and top panels removed in step 1.
(Refer to section 2-7-1.)

4-6. Replacing the AU Plate Assembly

Tools

- Torque wrench (For 60 kgf•cm)
- Torque driver bit (For M4 and M5)

Removal

1. Removing the FTP panel B

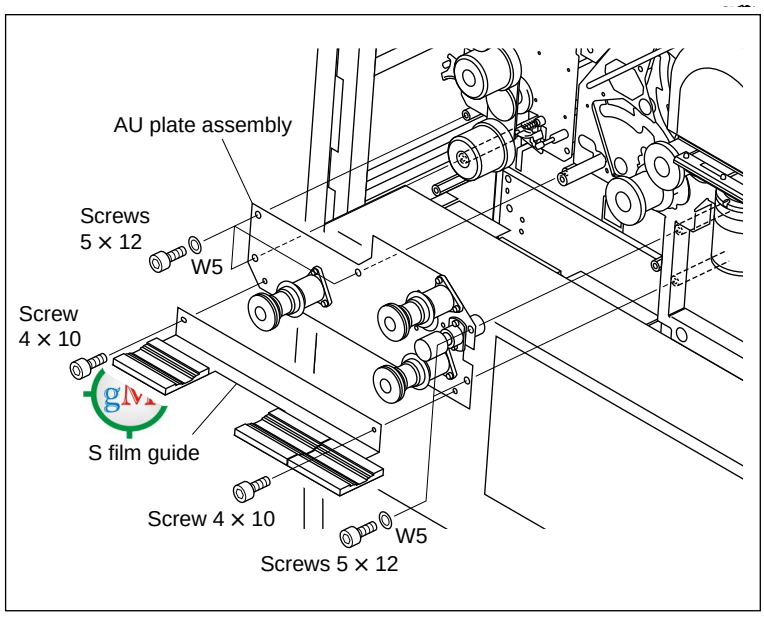
Remove the FTP panel B.
(Refer to section 2-7-4.)

2. Removing the S film guide

Remove the two screws, and remove the S film guide.

3. Removing the AU plate assembly

Remove the five screws, and remove the AU plate assembly.



Installation

4. Installing the AU plate assembly

Install the AU plate assembly using the five screws.

5. Installing the S film guide

Install the S film guide using the two screws.

6. Installing the FTP panel B

Install the FTP panel removed in step 1.
(Refer to section 2-7-4.)

4-7. Replacing the Guide Roller Assembly

Tools

- Torque wrench (For 60 kgf•cm)
- Torque driver bit (For M4)
- 35G height gauge

Removal

1. Removing the FTP panel

(Refer to section 2-7-4.)

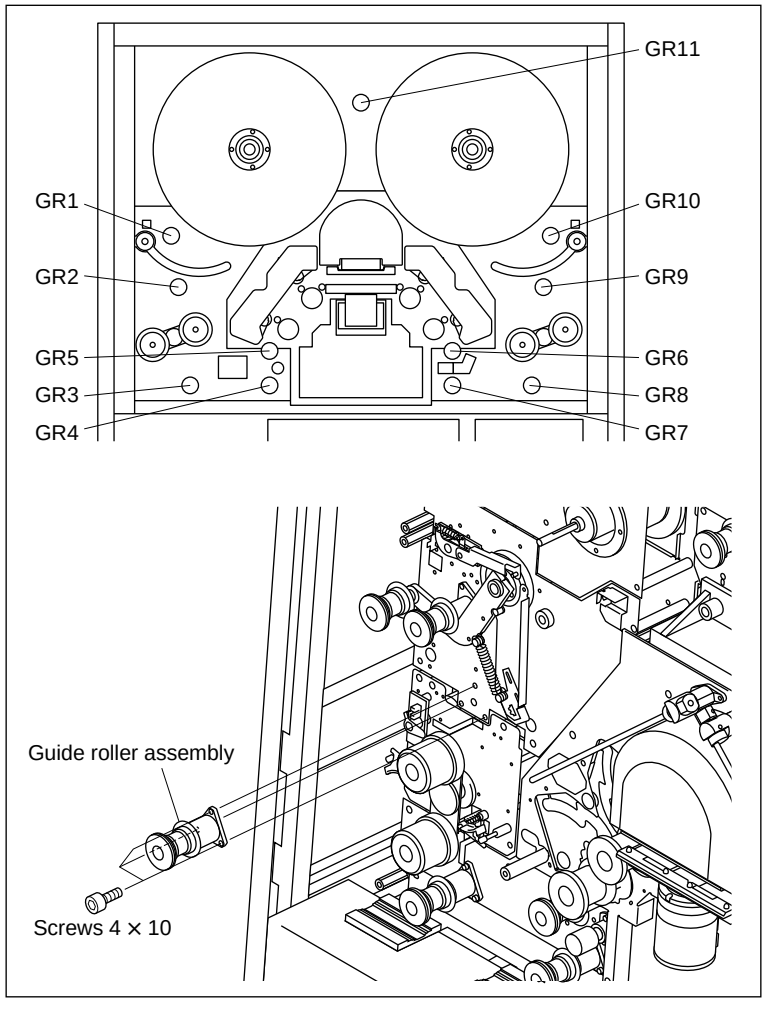
2. Removing the guide roller assembly

Remove the three screws, and install the guide roller assembly.

Installation

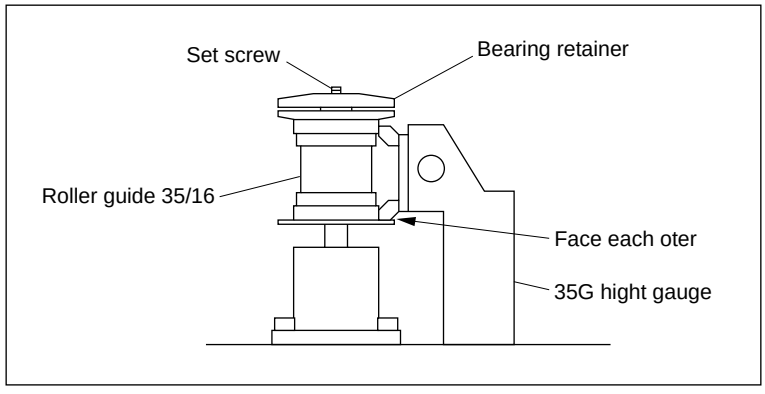
3. Installing the guide roller assembly

Install the guide roller assembly using the three screws.



4. Adjusting the guide roller height

(1) Loosen the fixing screw of the guide roller.
(2) Rotate the bearing holder.
(3) Align the lower flange of the roller guide and the 35G height gauge, and tighten the fixing screw.



5. Installing the FTP panel

(Refer to section 2-7-4.)

4-8. Replacing the Guide Plate Assembly

Tools

- Phillips screwdriver
- Torque wrench (For 60 kgf•cm)
- Torque driver bit (For M5)

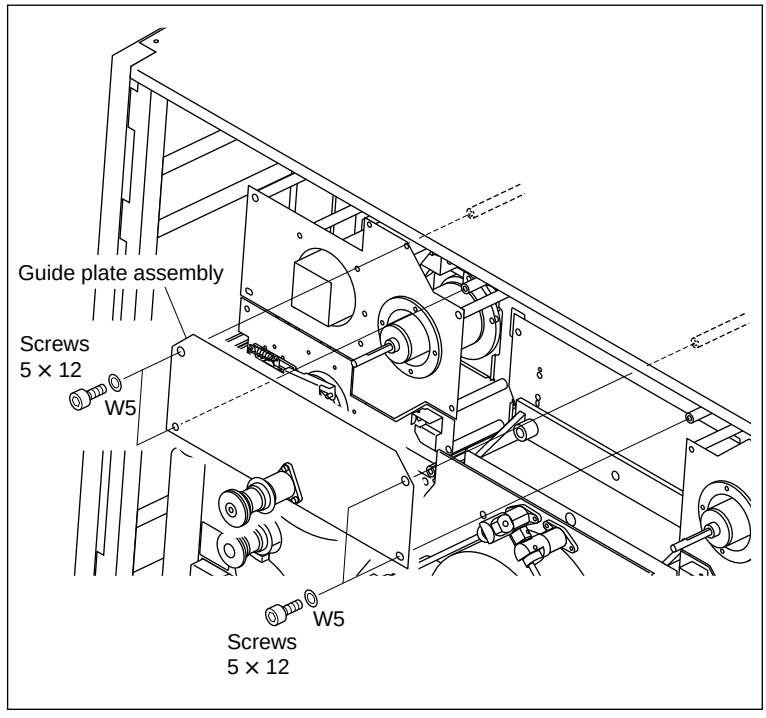
Removal

1. Removing the FTP panel A

Remove the FTP panel A
(Refer to section 2-7-4.)

2. Removing the guide plate assembly

Remove the four screws, and install the guide plate assembly.



Installation

3. Installing the guide plate assembly

Install the guide plate assembly using the four screws.

4. Installing the FTP panel A

Install the FTP panel removed in step 1.
(Refer to section 2-7-4.)

4-9. Replacing the T Plate Assembly

Tools

- Torque wrench (For 60 kgf•cm)
- Torque driver bit (For M5)

Removal

1. Removing the FTP panel C

Remove the FTP panel C.
(Refer to section 2-7-4.)

2. Disconnecting the connectors

Disconnect the following connectors, and remove the harness from the wiring stopper.

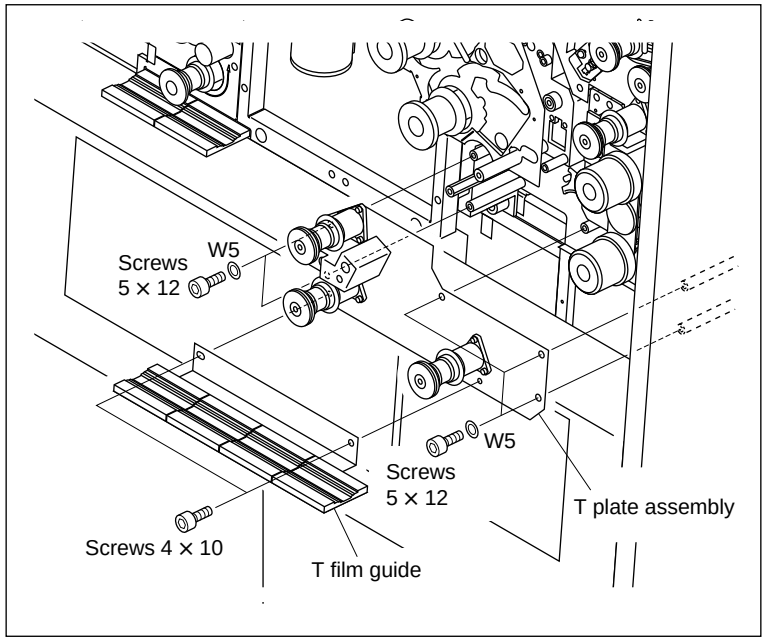
- CN1/SW-989 board
- CN1/SW-1004 board

3. Removing the T film guide

Remove the two screws, and remove the T film guide.

4. Removing the T plate assembly

Remove the five screws, and remove the guide plate assembly.



Installation

5. Installing the T plate assembly

Install the guide plate assembly using the five screws.

6. Installing the T film guide

Install the T film guide using the two screws.

7. Connecting connectors

Connect the connectors disconnected at step 2.

8. Installing the FTP panel C

Install the FTP panel C removed in step 1.
(Refer to section 2-7-4.)

4-10. Replacing the Processor Assembly

Preliminary Preparations

Open the door at the bottom of the unit.

Removal

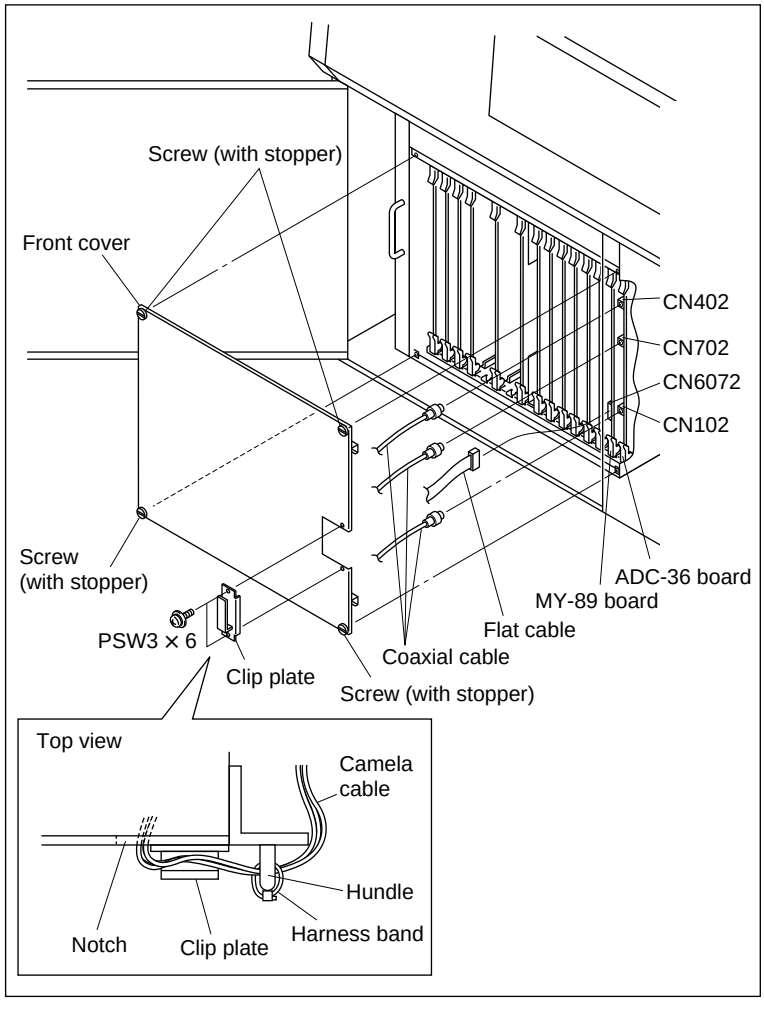
1. Removing the camera cable

(1) Disconnect the camera cable from the clip plate (coaxial cable and flat cable).

Note

If the camera cable is bound to the handle of the processor assembly, unbind it also.

(2) Remove the two screws, and remove the clip plate.
(3) Loosen the four screws (with stopper), and remove the front cover.
(4) Disconnect the flat cable from the connector CN6027 of the MY-89 board.
(5) Remove the three coaxial cables from the connectors CN402, CN702, and CN102 of the ADC-36 board.



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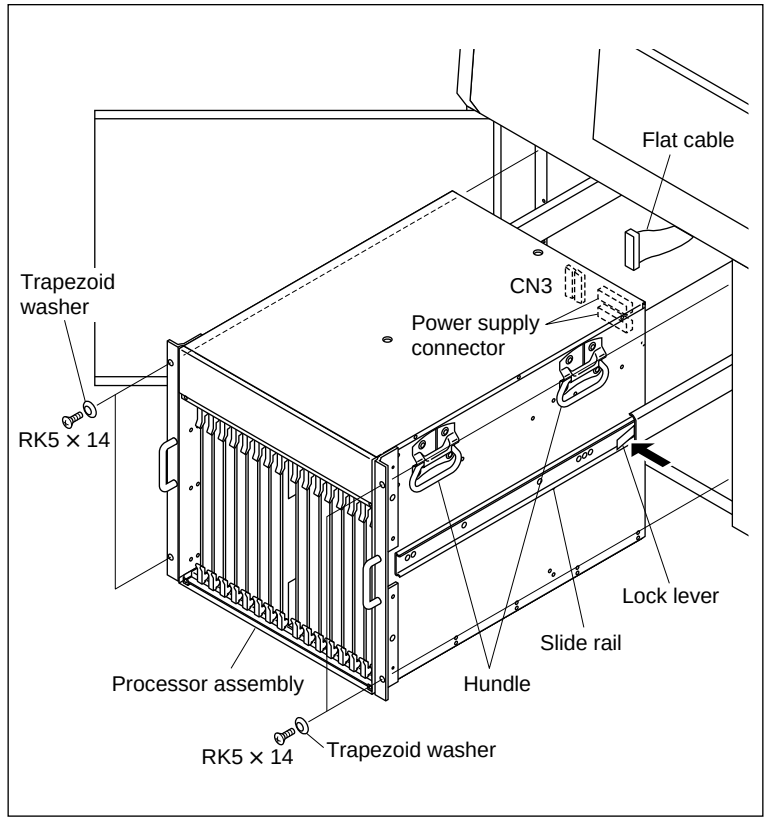
2. Removing the processor assembly

Note

When removing the processor assembly from the unit, be sure to perform the procedure by more than two persons.

(1) Remove the four screws and trapezoid washer.
(2) Holding the handle, pull out the processor assembly to the front (15 cm).
(3) Disconnect the CN3 connector (rear) of the processor assembly from the rear of the unit.
(4) Pull out the processor assembly to the position hooking the stopper.
(5) Press the lock lever of the slide rail in the arrow direction.
(6) Holding the handle on the side of the processor assembly, and remove from the unit.



Installation

3. Installing the processor assembly

(1) Pull out the slide rail of the unit.
(2) Insert the rail of the processor assembly slowly into the slide rail of the unit.
(3) Push in the processor assembly completely.

Note

Firmly push in the two power connectors of the processor assembly to the connectors of the unit until they connect.

(4) Connect the connector CN3 (rear) of the processor assembly from the rear of the unit.
(5) Secure the processor assembly with the four screws and trapezoid washer.

4. Installing the camera cable

Connect the camera cable removed in step 1, and install the front cover.

4-11. Replacing the Power Supply for Processor

Preliminary Preparations

Open the door at the bottom of the unit.

Removal

1. Removing the power supply for the processor

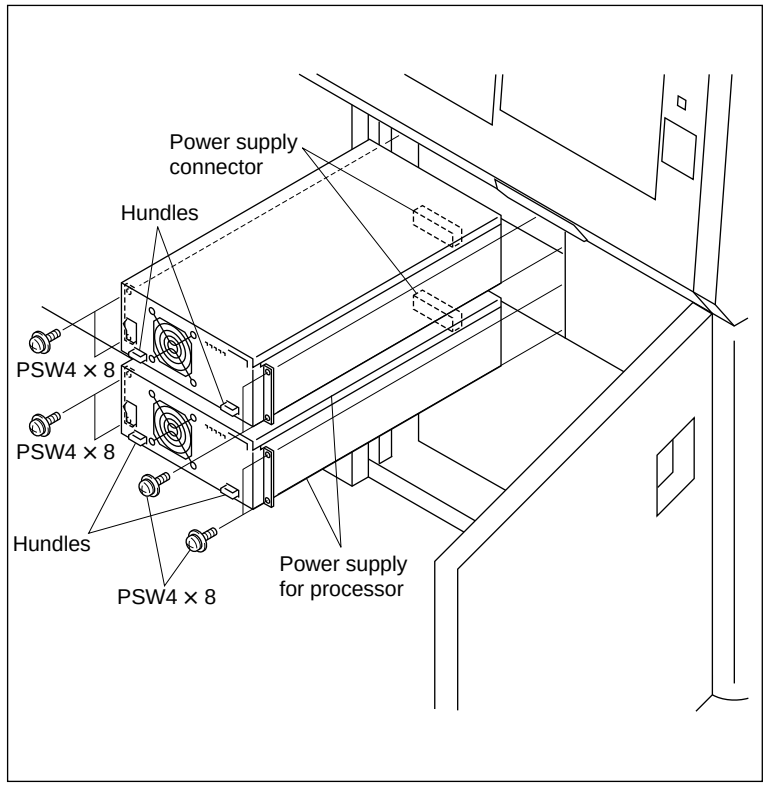
(1) Turn off the AC power supply which supplies the power to the FVS-1000.

Note

To prevent an electric shock, be sure to turn off the power of the AC power supply which supplied the power to the FVS-1000 before removing.

(2) Remove the four screws.

(3) Holding the handle of the power supply for the processor, pull out the power supply.



Installation

2. Installing the power supply for the processor

(1) Align the connector at the rear of the power supply for the processor and the connector of the DD-33 board, and push in.

Note

Firmly push in the connector at the rear of the power supply to the connector of the DD-33 board until they connect.

(2) Secure the power supply for the processor using four screws.

Section 7
Spare Parts

7-1. Notes on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
Parts list has the present standardized repair parts.

3. Stock of Parts

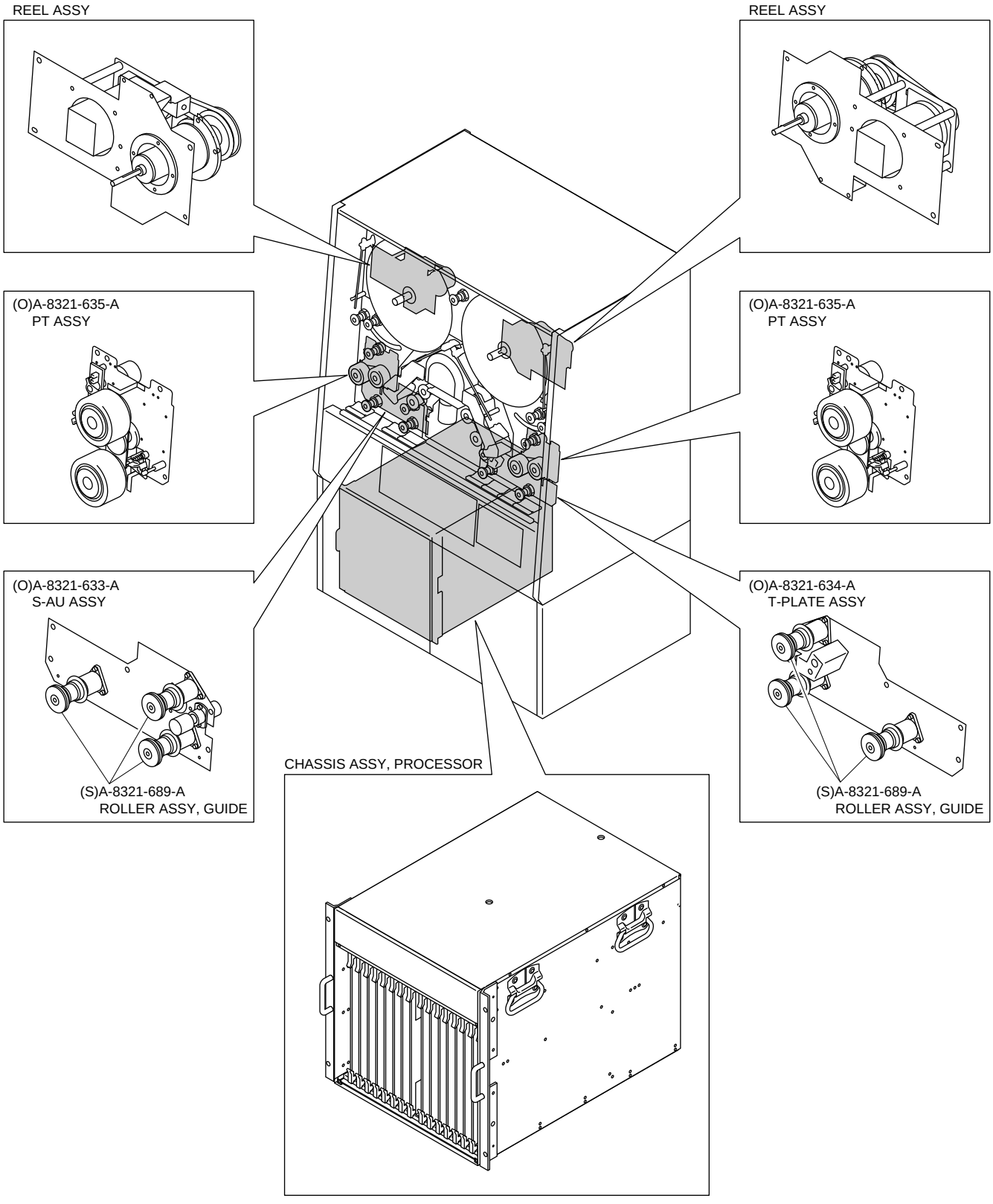
Parts marked with “o” at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

4. Destination Representation

The part indicated “For J/UC/CE” in the spare parts list is used in the unit written below.

For J: The part is used in a unit for Japan.
For UC: The part is used in a unit for the U.S.A. and Canada.
For CE: The part is used in a unit for regions except the above countries.

7-2. Exploded Views



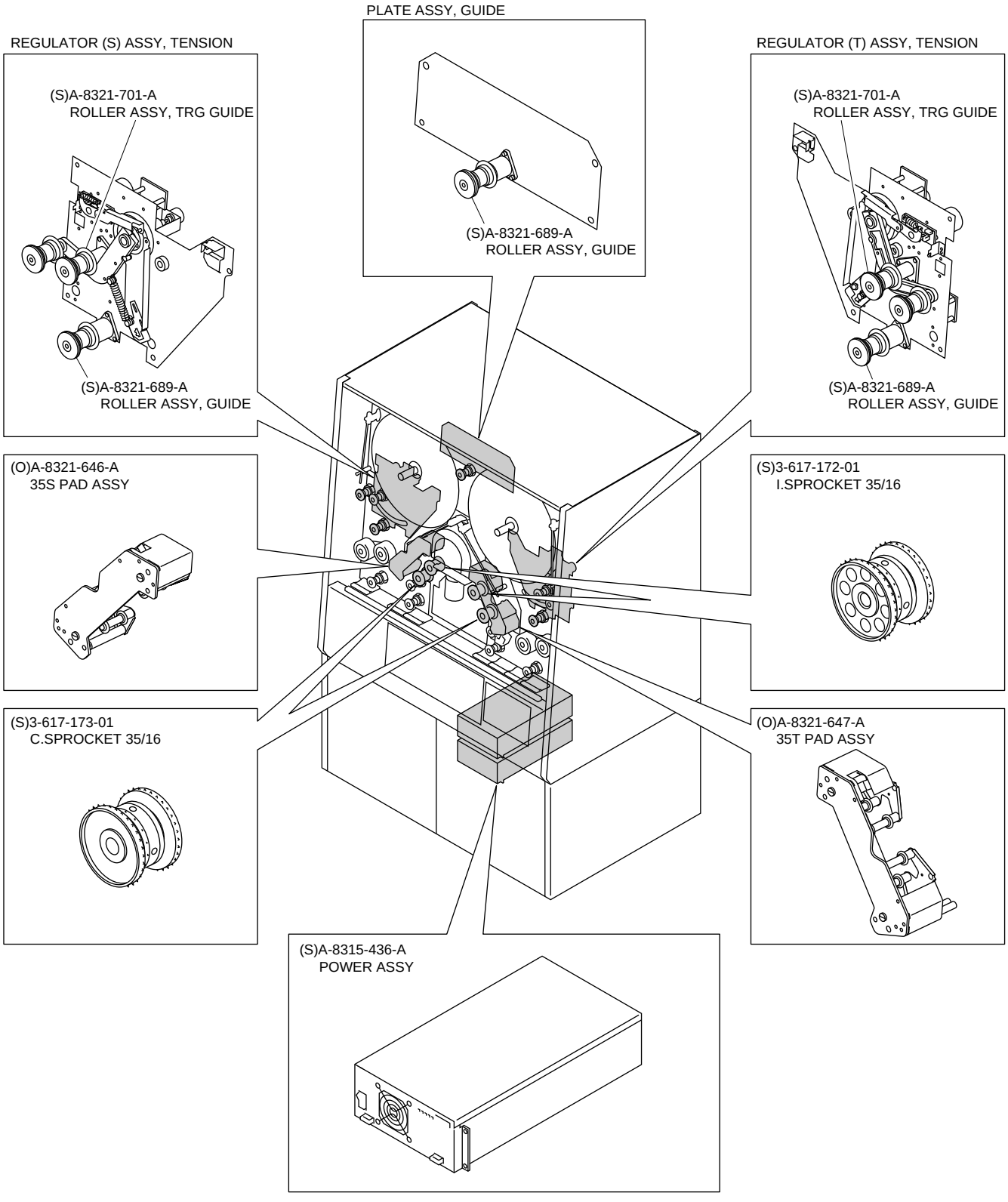
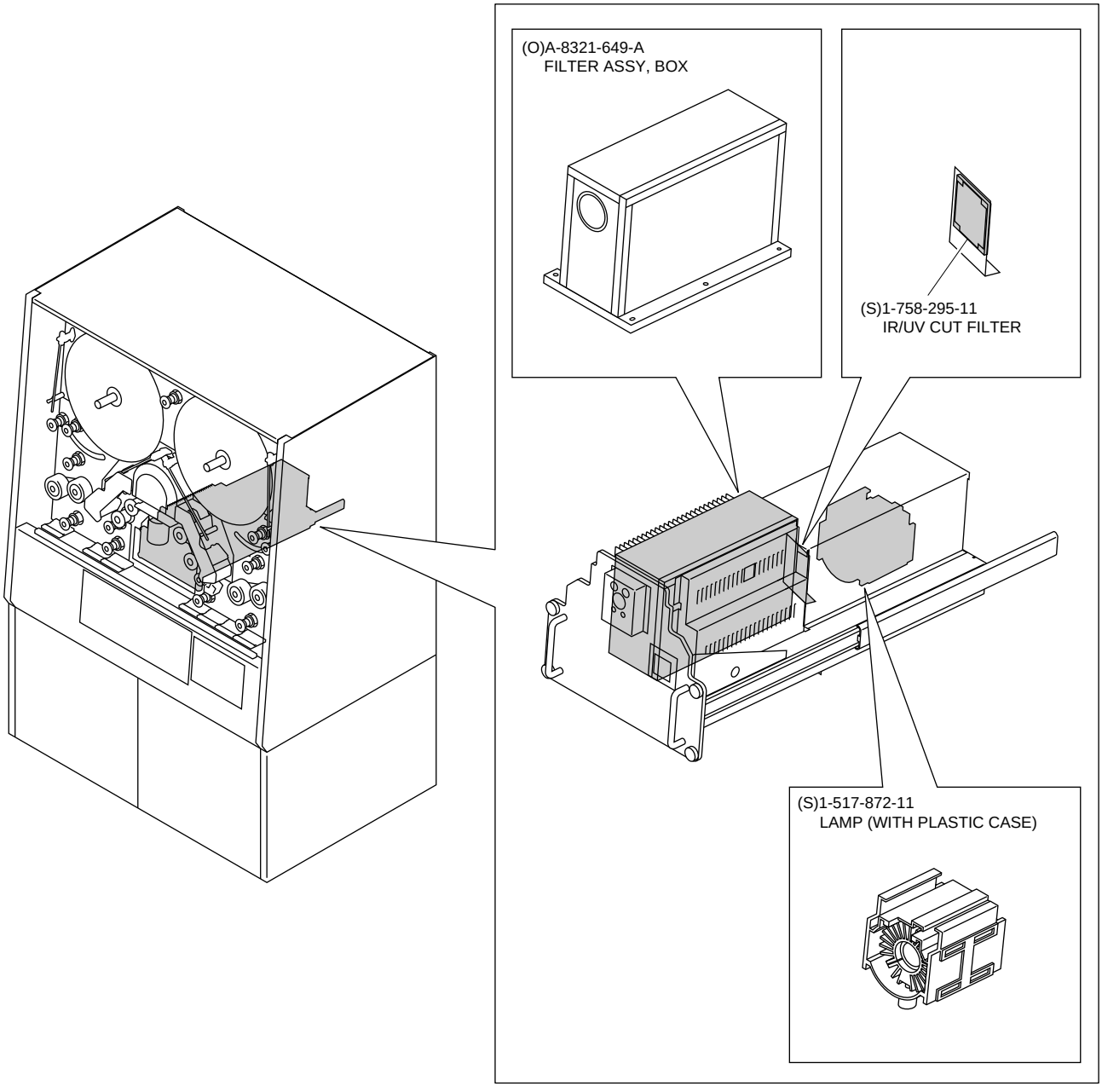


PLATE ASSY, GUIDE
(S)A-8321-689-A
ROLLER ASSY, GUIDE
REGULATOR (S) ASSY, TENSION
(S)A-8321-701-A
ROLLER ASSY, TRG GUIDE
(S)A-8321-689-A
ROLLER ASSY, GUIDE
REGULATOR (T) ASSY, TENSION
(S)A-8321-701-A
ROLLER ASSY, TRG GUIDE
(S)A-8321-689-A
ROLLER ASSY, GUIDE
(O)A-8321-646-A
35S PAD ASSY
(S)3-617-172-01
I.SPROCKET 35/16
(S)3-617-173-01
C.SPROCKET 35/16
(O)A-8321-647-A
35T PAD ASSY
(S)A-8315-436-A
POWER ASSY


(O)A-8321-649-A
FILTER ASSY, BOX
(S)1-758-295-11
IR/UV CUT FILTER
(S)1-517-872-11
LAMP (WITH PLASTIC CASE)

7-3. Electrical Parts List

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Part No.    SP Description

A-8273-212-A o MOUNTED CIRCUIT BOARD, MX-59
A-8273-217-A o MOUNTED CIRCUIT BOARD, DU-1
A-8273-219-A o MOUNTED CIRCUIT BOARD, PA-173
A-8273-225-A o MOUNTED CIRCUIT BOARD, PS-419
A-8318-983-A o MOUNTED CIRCUIT BOARD, TX-68

A-8318-985-A o MOUNTED CIRCUIT BOARD, RX-46
A-8320-667-A o MOUNTED CIRCUIT BOARD, MB-815
A-8320-672-A o MOUNTED CIRCUIT BOARD, KY-423
A-8320-674-A o MOUNTED CIRCUIT BOARD, CN-1610
A-8320-675-A o MOUNTED CIRCUIT BOARD, CN-1611

A-8320-676-A o MOUNTED CIRCUIT BOARD, CN-1612
A-8320-677-A o MOUNTED CIRCUIT BOARD, CN-1626
A-8320-692-A o MOUNTED CIRCUIT BOARD, SE-448
A-8320-693-A o MOUNTED CIRCUIT BOARD, SE-449
A-8320-708-A o MOUNTED CIRCUIT BOARD, SE-514

A-8320-709-A o MOUNTED CIRCUIT BOARD, SE-515
A-8320-724-A o MOUNTED CIRCUIT BOARD, MB-777
A-8320-735-A o MOUNTED CIRCUIT BOARD, PR-239
A-8320-736-A o MOUNTED CIRCUIT BOARD, IF-693
A-8320-737-A o MOUNTED CIRCUIT BOARD, SH-70

A-8320-739-A o MOUNTED CIRCUIT BOARD, DD-33
A-8320-740-A o MOUNTED CIRCUIT BOARD, CP-322
A-8320-741-A o MOUNTED CIRCUIT BOARD, SV-186
A-8320-742-A o MOUNTED CIRCUIT BOARD, SV-191
A-8320-743-A o MOUNTED CIRCUIT BOARD, SV-192

A-8320-744-A o MOUNTED CIRCUIT BOARD, LC-35
A-8320-745-A o MOUNTED CIRCUIT BOARD, PD-91
A-8320-746-A o MOUNTED CIRCUIT BOARD, CN-1749
A-8320-748-A o MOUNTED CIRCUIT BOARD, SE-516
A-8320-750-A o MOUNTED CIRCUIT BOARD, SE-520

A-8320-751-A o MOUNTED CIRCUIT BOARD, ADC-36
A-8320-752-A o MOUNTED CIRCUIT BOARD, MY-89
A-8320-753-A o MOUNTED CIRCUIT BOARD, YM-16
A-8320-754-A o MOUNTED CIRCUIT BOARD, CC-78
A-8320-755-A o MOUNTED CIRCUIT BOARD, VE-42

A-8320-756-A o MOUNTED CIRCUIT BOARD, DSP-81
A-8320-757-A o MOUNTED CIRCUIT BOARD, DCP-20
A-8320-758-A o MOUNTED CIRCUIT BOARD, RX-45
A-8320-759-A o MOUNTED CIRCUIT BOARD, TX-67
A-8320-760-A o MOUNTED CIRCUIT BOARD, SY-256

A-8320-761-A o MOUNTED CIRCUIT BOARD, TG-196
A-8320-765-A o MOUNTED CIRCUIT BOARD, CN-1600
A-8320-766-A o MOUNTED CIRCUIT BOARD, EN-137
A-8320-767-A o MOUNTED CIRCUIT BOARD, DHP-10
A-8320-768-A o MOUNTED CIRCUIT BOARD, IPM-85

A-8320-769-A o MOUNTED CIRCUIT BOARD, OPM-28
A-8320-780-A o MOUNTED CIRCUIT BOARD, CN-1674
A-8320-801-A o MOUNTED CIRCUIT BOARD, VA-158A
A-8320-951-A o MOUNTED CIRCUIT BOARD, DR-376
A-8320-952-A o MOUNTED CIRCUIT BOARD, NR-66

A-8320-953-A o MOUNTED CIRCUIT BOARD, RP-108
A-8320-954-A o MOUNTED CIRCUIT BOARD, TG-209
A-8321-134-A o MOUNTED CIRCUIT BOARD, CN-1871
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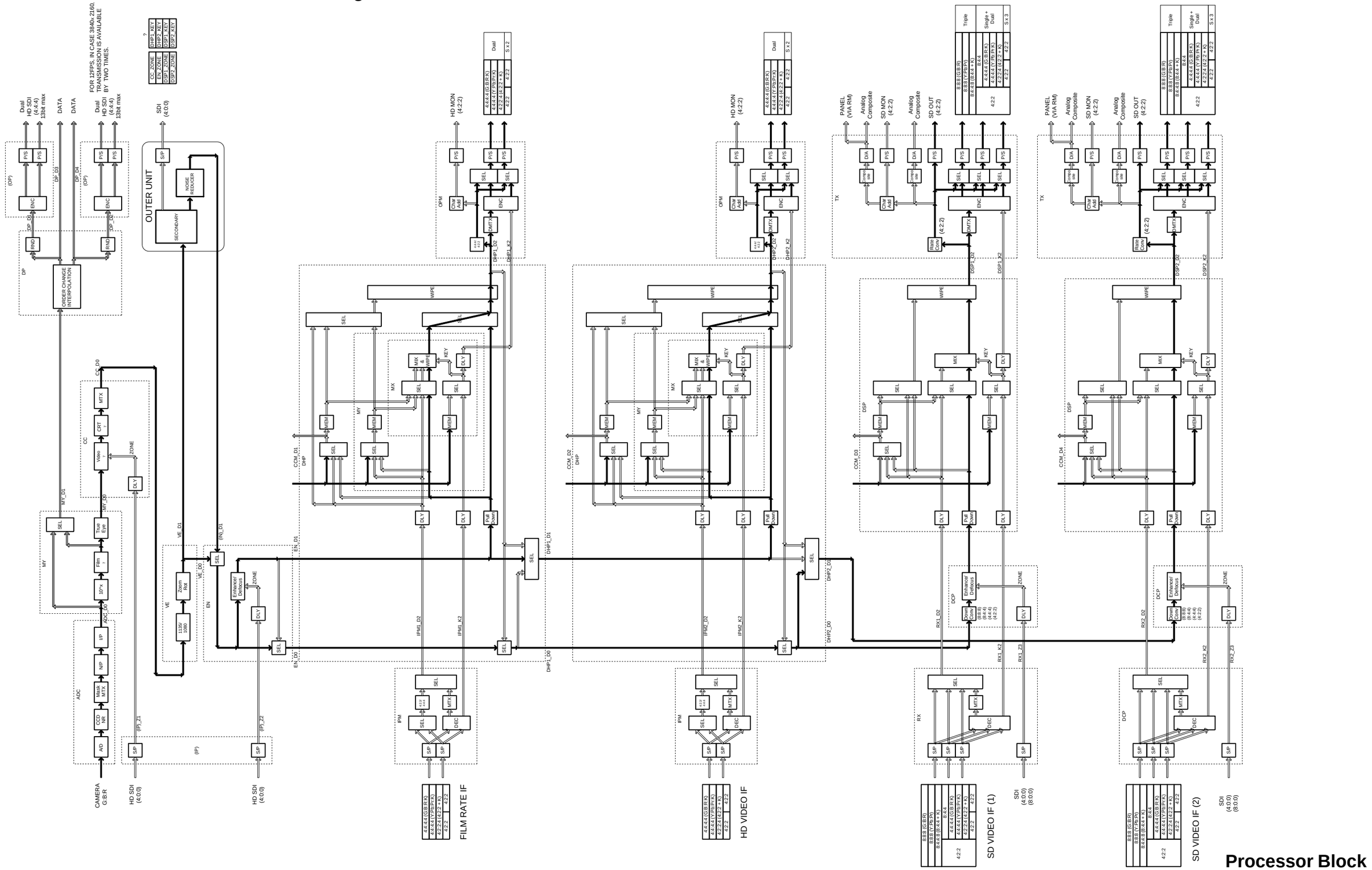
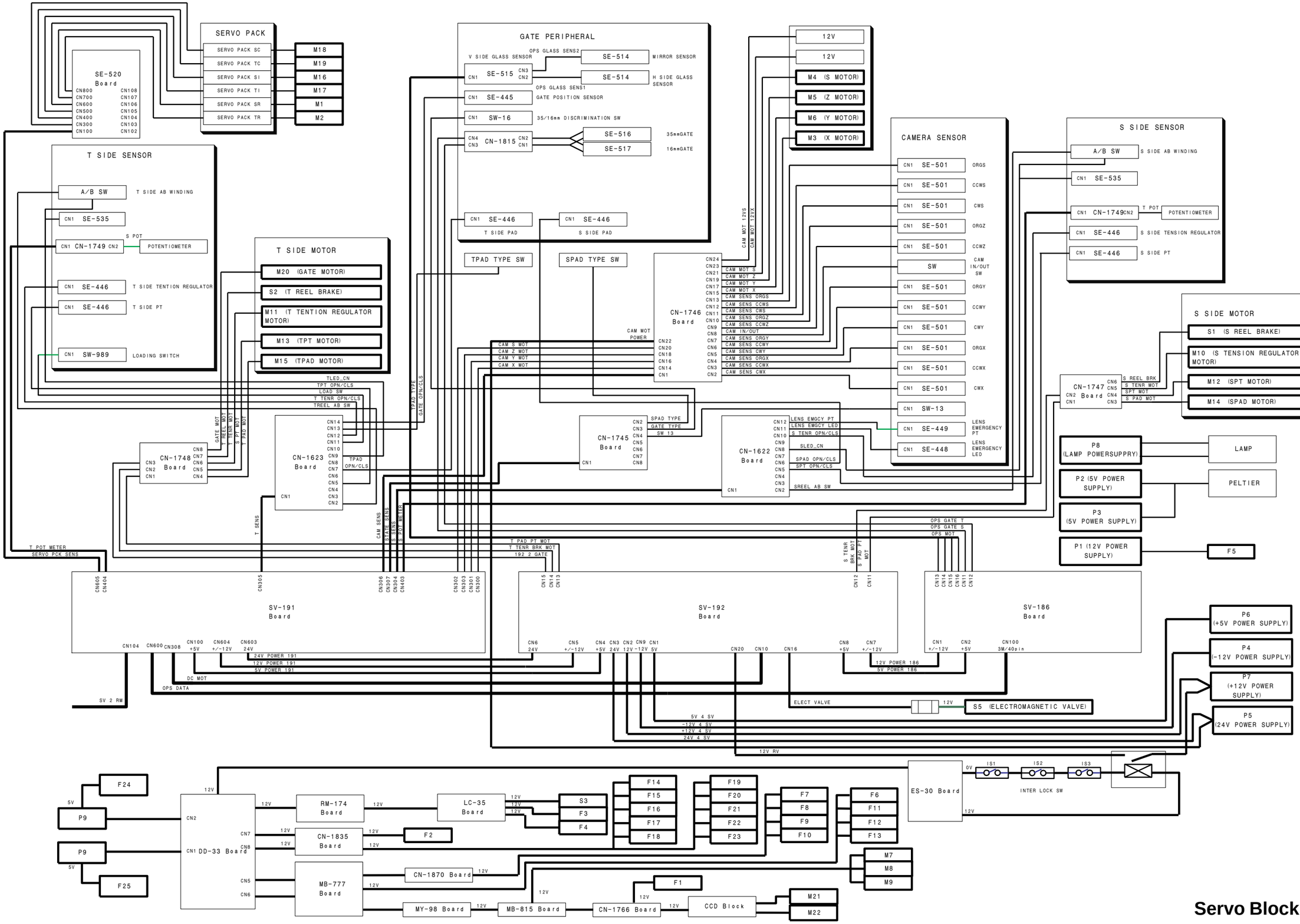
Section 8
Block Diagrams




SERVO PACK
SERVO PACK SC
SERVO PACK TC
SERVO PACK SI
SERVO PACK TI
SERVO PACK SR
SERVO PACK TR
M18
M19
M16
M17
M1
M2
SE-520 Board
CN800 CN108
CN700 CN107
CN600 CN106
CN500 CN105
CN400 CN104
CN300 CN103
CN100 CN102
GATE PERIPHERAL
V SIDE GLASS SENSOR
OPS GLASS SENS2
SE-514
MIRROR SENSOR
CN1 SE-515 CN3 CN2
SE-514
H SIDE GLASS SENSOR
OPS GLASS SENS1
CN1 SE-445
GATE POSITION SENSOR
CN1 SW-16
35/16mm DISCRIMINATION SW
CN4 CN3 CN-1815 CN2 CN1
SE-516
35mmGATE
SE-517
16mmGATE
CN1 SE-446
T SIDE PAD
CN1 SE-446
S SIDE PAD
12V
12V
M4 (S MOTOR)
M5 (Z MOTOR)
M6 (Y MOTOR)
M3 (X MOTOR)
CAMERA SENSOR
CN1 SE-501 ORGS
CN1 SE-501 CCWS
CN1 SE-501 CWS
CN1 SE-501 ORGZ
CN1 SE-501 CCWZ
SW CAM IN/OUT SW
CN1 SE-501 ORGY
CN1 SE-501 CCWY
CN1 SE-501 CWY
CN1 SE-501 ORGX
CN1 SE-501 CCWX
CN1 SE-501 CWX
CN1 SW-13
CN1 SE-449 LENS EMERGENCY PT
CN1 SE-448 LENS EMERGENCY LED
S SIDE SENSOR
A/B SW
S SIDE AB WINDING
CN1 SE-535
CN1 CN-1749 CN2 T POT POTENTIOMETER
CN1 SE-446 S SIDE TENSION REGULATOR
CN1 SE-446 S SIDE PT
T SIDE SENSOR
A/B SW
T SIDE AB WINDING
CN1 SE-535
S POT
CN1 CN-1749 CN2 POTENTIOMETER
CN1 SE-446 T SIDE TENTION REGULATOR
CN1 SE-446 T SIDE PT
CN1 SW-989 LOADING SWITCH
T SIDE MOTOR
M20 (GATE MOTOR)
S2 (T REEL BRAKE)
M11 (T TENTION REGULATOR MOTOR)
M13 (TPT MOTOR)
M15 (TPAD MOTOR)
TPAD TYPE SW
SPAD TYPE SW
CN-1746 Board
CAM MOT POWER
CAM MOT S
CAM MOT Z
CAM MOT Y
CAM MOT X
CAM SENS ORGS
CAM SENS CCWS
CAM SENS CWS
CAM SENS ORGZ
CAM SENS CCWZ
CAM IN/OUT
CAM SENS ORGY
CAM SENS CCWY
CAM SENS CWY
CAM SENS ORGX
CAM SENS CCWX
CAM SENS CWX
CAM MOT 12VS
CAM MOT 12VX
CAM S MOT
CAM Z MOT
CAM Y MOT
CAM X MOT
TLED_CN
TPT OPN/CLS
LOAD SW
T TENR OPN/CLS
TREEL AB SW
GATE MOT
T REEL MOT
T TENR MOT
S PT MOT
T PAD MOT
CN-1748 Board
CN-1623 Board
TPAD OPN/CLS
CN-1745 Board
SPAD TYPE
GATE TYPE
SW 13
CN-1622 Board
SLED_CN
SPAD OPN/CLS
SPT OPN/CLS
SREEL AB SW
S SIDE MOTOR
S1 (S REEL BRAKE)
M10 (S TENSION REGULATOR MOTOR)
M12 (SPT MOTOR)
M14 (SPAD MOTOR)
CN-1747 Board
S REEL BRK
S TENR MOT
SPT MOT
S PAD MOT
P8 (LAMP POWERSUPPRY)
LAMP
P2 (5V POWER SUPPLY)
PELTIER
P3 (5V POWER SUPPLY)
P1 (12V POWER SUPPLY)
F5
T SENS
CAM SENS
S STATE SENS
S SENS
S POT METER
T POT METER
SERVO PCK SENS
T PAD PT MOT
T TENR BRK MOT
192 2 GATE
S TENR BRK MOT
S PAD PT MOT
OPS GATE T
OPS GATE S
OPS MOT
SV-191 Board
SV-192 Board
SV-186 Board
CN605 CN404
CN305
CN306 CN307 CN304 CN403
CN302 CN303 CN301 CN300
CN15 CN14 CN13
CN12 CN11
CN13 CN14 CN15 CN16 CN17 CN12
CN104 CN600 CN308 CN100 +5V CN604 +/-12V CN603 24V
24V POWER 191
12V POWER 191
5V POWER 191
DC MOT
OPS DATA
SV 2 RM
CN6 24V CN5 +/-12V CN4 +5V CN3 24V CN2 12V CN9 -12V CN1 5V
CN20 CN10 CN16
CN8 +5V CN7 +/-12V
12V POWER 186
5V POWER 186
CN1 +/-12V CN2 +5V CN100 3M/40pin
P6 (+5V POWER SUPPLY)
P4 (-12V POWER SUPPLY)
P7 (+12V POWER SUPPLY)
P5 (24V POWER SUPPLY)
ELECT VALVE
12V
S5 (ELECTROMAGNETIC VALVE)
5V 4 SV
-12V 4 SV
+12V 4 SV
24V 4 SV
12V RV
F24
P9
P9
F25
DD-33 Board
RM-174 Board
CN-1835 Board
MB-777 Board
LC-35 Board
S3
F3
F4
F2
CN-1870 Board
MY-98 Board
MB-815 Board
CN-1766 Board
CCD Block
F1
F14
F15
F16
F17
F18
F19
F20
F21
F22
F23
F7
F8
F9
F10
F6
F11
F12
F13
M7
M8
M9
M21
M22
ES-30 Board
0V
IS1
IS2
IS3
INTER LOCK SW
12V

Servo Block

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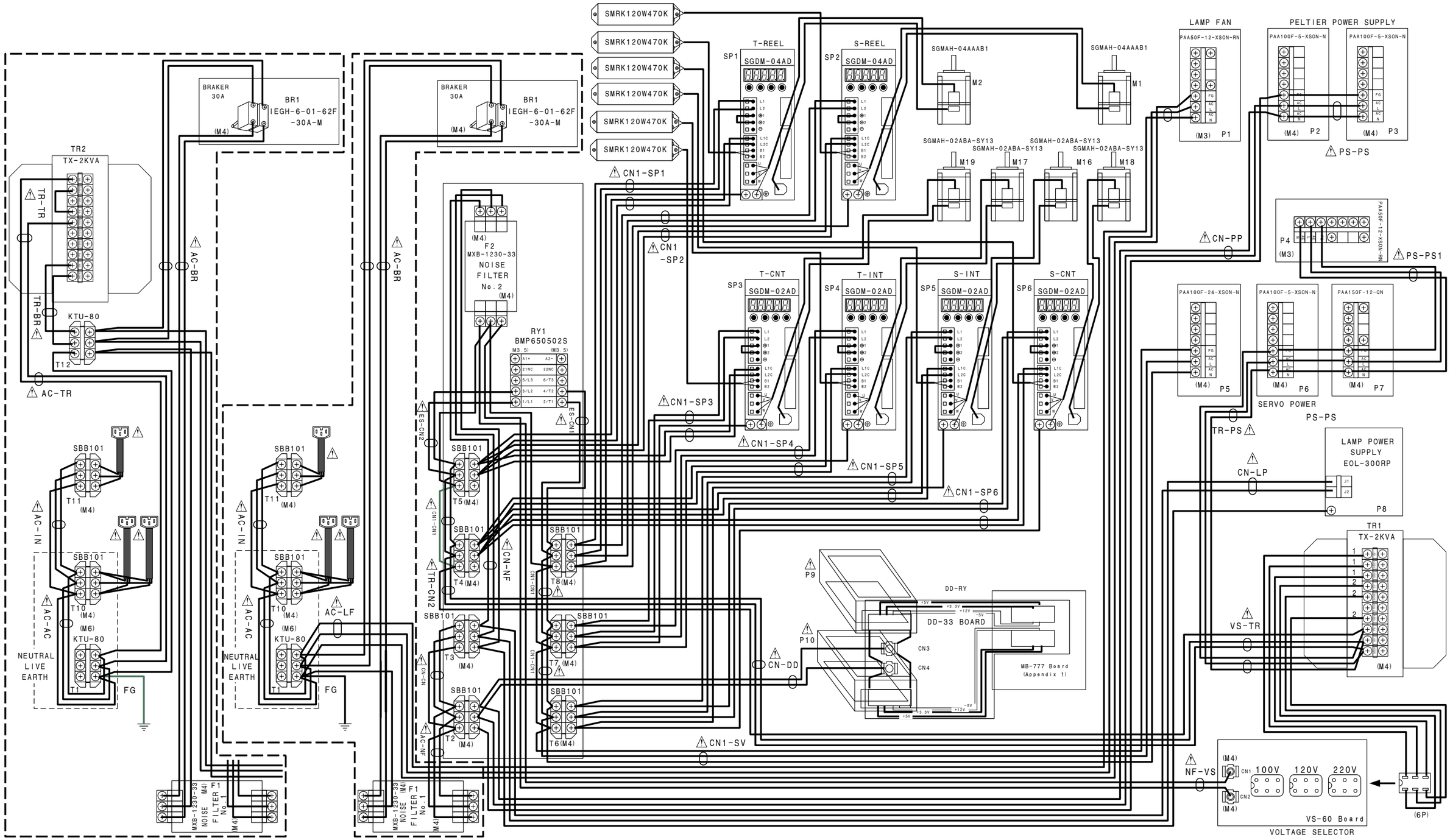

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